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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 1. SAN FRANCISCO, SATURDAY, JULY 5, 1913. Forty-Third Year.

CALIFORNIA STATE

Deciduous Fruit Crop Prospects.

A year ago this week this journal printed estimates on crop prospects as they appeared at that time. Then, as now, the crop prospect did not look very good. Then we faced trying conditions for the trees, owing to a dry winter preceding, now the trees must carry the fruit to harvest after having passed through two dry seasons. This year the added visits of frosts early in the season made at that time the prospect for good fruit yields almost hopeless. But the strange fact that confronts the growers in most localities is that as the season progresses the prospects are getting better. California will not have a normal crop in any of the fruits quoted in the accompanying table this season, but it will produce a great deal more than was thought possible two months ago. There are some sections which will produce very little fruit, owing to the dry weather or frost visitation, but in many good producing sections the crops will be very heavy, because in some instances there was plenty of rain and very little frost damage. In some sections frost-fighting devices were used and more orchards have been irrigated this year than ever before.

By studying the table, we find that the apricot prospect is for 50% of a normal yield. At least several heavy producing counties, like Alameda, Santa Clara and Solano, indicate that estimate to be about right.

Apples will be a light crop, though there are some counties in the list that promise full yields. But take the heaviest producing counties on this fruit and from them one can get a pretty good idea of the chances in the State. Santa Cruz county, by far the largest producing section, will have a crop of apples only about 20% of what it was last year. True, the next county in importance is Sonoma, where a pretty fair prospect exists, yet perhaps 40% of a normal crop for the State is all that can be hoped for.

Prunes also are irregular, but the chances seem to be getting better as the harvest time draws near. A very conservative estimator from Santa Clara county places the yield at from 50,000,000 to 60,000,000 pounds. Last year that section produced around 100,000,000 pounds, or half the State's output. This year the yield from outside the Santa Clara section does not promise as well as it did at this time last season. Perhaps 50% of a normal yield is a fair estimate at this time.

Peaches will also be short, taking the State as a whole. Fresno county is the big producer, and the crop there will be quite large, but not as large as a year ago. Placer, Sacramento, San Joaquin, Solano and Sonoma counties also promise fair yields, which will help to keep up the average for the State.

Pears promise to come nearer to an average yield than most any other fruit. The larger producing sections indicate crops ranging from 60 to 85%.

Table grapes also promise fairly good—much better in fact than had been hoped for—and while table grapes are grown heaviest in the sections that had small rainfall last year, the great amount of irrigation that has been done explains the good conditions that are at present prevailing.

While we have not tabulated the figures secured on fig prospects, it is shown from the reports that the crop will be fine. In practically all the counties of the San Joaquin and Sacramento valleys the estimators tell us that the crop promises from 70 to 100% of the normal.

Plums will also come near to being a normal yield. Shasta is the almost single exception to a good yield of this fruit.

Two-Year-Old Prunes at San Fernando.

First Year's Growth in Fine Prune Orchard.

Notes From Correspondents.

Our Merced correspondent says that there is a large crop of early tomatoes. Alfalfa crop is large, also good crop of potatoes and a big acreage planted to sweets.

Monterey county, in the table on page 5, promised a 150% crop of apricots last week. As the fruit was dropping pretty badly, perhaps this estimate should be discounted a little.

Most reports say that, owing to lighter setting, fruits will generally be of larger size than usual.

Orange county will have a 95% walnut crop. Sugar beets about 80%. Grain and hay light.

While the fruit crops will be light in Shasta county this year, the farmers there have a fine hay crop, and grain is better than in years. Feed is splendid and stock doing well.

Cut worms are reported to have done some damage to grape vines in Stanislaus county. Grasshoppers are reported to have done some damage to orchards in the Sierra foothills, also some damage to grapes adjoining pastures in Sonoma county. In the counties of Contra Costa, Tulare and Stanislaus no grasshopper injury is apparent.

If it were not for a late frost Mendocino county would have had a great year. However, if the fruit is light, farmers will make up on 100% crops of grain hay, grain, alfalfa and hops.

The Gravenstein apple crop around Sebastopol will be less than 50% of last year, caused principally by the big crop borne by the trees last season. Berry growers in that section are having a very profitable season, good crops and good prices.

Santa Cruz county will have short fruit crops. Apples were caught by frost and stone fruits hurt principally by lack of moisture.

(Continued on Page 5.)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., July 1, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.35	.00	.00	64	52
Red Bluff	.20	.00	.00	92	56
Sacramento	.00	.00	.00	92	52
San Francisco	.00	.00	.00	72	52
San Jose	T	.00	.00	88	48
Fresno	.04	.00	.00	98	54
Independence	.00	.00	.00	96	42
San Luis Obispo	.58	.00	.00	88	50
Los Angeles	.56	.00	.00	90	58
San Diego	.04	.00	.00	78	58

The Week.

The summer is reaching its height; the firecrackers are cracking, the bombs are bursting, and the skyrockets are soaring skyward while this is in Uncle Sam's care speeding to the postoffices throughout the State, and the big thing at this time is the caring for the fruit crop which is just on the verge of the most active time. But the event of the week (last week and the tail-end of it) was not fruit, but stock, for the annual meeting of the California Livestock Breeders' Association—half a year late, by the way—was held on Saturday. California's glory, outside of her climate and people, in the minds of most of the rest of the country, comes from her fruit. In a way that is right, for her fruit is unique and beyond competition from the other States, and it deserves all the glory that can be showered upon it, while she has to share her reputation for stock with the rest of the country, and since other States have livestock and do not have any such fruit as ours, they forget our stock and perhaps think that a little cold spell like that of last January wiped California off the map. It didn't by a long shot, but California would be a good deal better off for population if Easterners realized that California livestock was an even greater industry than her fruit. No State is making more rapid progress in the number and quality of the herds of pure-bred stock of all kinds than California, which climate, irrigation, and alfalfa fit in with so well. The big tendency at present is the breaking up of the ranges and the finishing of the range cattle on the small farm, or the raising of high-class cattle straight through on the small farm. This tendency is strong all the way through and was illustrated in the attendance at the meeting. Although named a "Breeders" association, it had become largely a range organization. At this meeting the range men were more absent than present, while the small breeder and the pure-bred man was much in evidence, and the choice of officers and future management of the association apparently along the pure-bred lines and along the work of the small rancher.

Out in the World.

[BY THE EDITOR.]

[In our last issue Professor Wickson presented some observations and reflections on phases of farm life in northern Italy and the wonderful operations of their co-operative credit institutions. In this issue, other gatherings in northern Italy and in Hungary appear to be along the same lines.—ASSOCIATE.]

Although we have disclaimed present ability to classify or even to fully enumerate what may be called co-operative credit institutions which we have been sent to Europe to hunt, bag and bring home, we must run along with the effort to suggest what things they are and are doing.

Last week we told of a Peoples Savings Bank which seemed almost too good to live in this wicked world. It was an old institution born to be good to city workmen and converted to be good to small farmers when organized to avail themselves of it—converted by the smiles of the government and of the philanthropic higher-ups; so very mellow that it insisted on doing things for farmers even if it lost money by it. It seemed to us to be something of a financial phenomenon.

We come now to another institution which did not have to be converted because it was born right. It was started in 1867 with a subscribed capital of $25,000 for the express purpose of financing co-operative societies by furnishing loans for short terms on endorsed notes as money might be needed to buy cheaply and carry customers for farming supplies. The resources of this Peoples Bank at present are as follows: Capital (paid in shares), $487,000; reserve funds, $300,000; deposits, $8,000,000. It does a credit business aggregating $12,000,000 a year, and does not lose a franc to the million on bad loans—practically no losses. Its interest rate is 5 and 5½% on paper with two signatures. Before such money was rendered available by this bank, money was hard to get on short loans at 8 to 14 per cent.

There are scores of such banks, and all of them seem to have plenty of money from depositors. They all loan money at ½% above the interest rate which they pay on deposits. They are all more or less altruistic, with directors receiving no compensation and only actual employees being paid. Under these conditions, ½% seems to more than cover cost of operation, because additions are constantly being made to the reserve funds. We presume it would be hard to find an American bank of any kind which paid depositors 4% and charged borrowers 4½%. Our readers can figure a little on that from their own experiences.

In connection with the foregoing, which relates almost wholly to short-term loans without security except the liability of endorsers, either individuals or co-operative societies, the availability of money on "open account" should be mentioned. It was clear that the various banks of popular or co-operative connections loaned money freely on open accounts. The borrower established his title to credit by demonstration of his responsibility either individually or as a member of a co-operative society. In this way he became privileged to draw money to a certain amount and could draw that amount or any part of it as he needed to use it. He could also pay in on account whatever and whenever he desired. He would be charged interest on his debit balance, or as we might say, his overdraft, whenever it occurred, and for just the period of its existence and no more. The interest would be just the same as for the short loans mentioned above. This, too, is a subject for reflection. It puts farmers on the best terms granted to commercial borrowers in American banks, and costs them much less interest than they now have to pay for money which they do not need in order to get what they do need for temporary purposes. The contrast becomes more striking when it is remembered that the banks would rather give farmers money on these favorable terms than to supply it to commercial people, for two reasons: first, because there is less danger of loss; second, because they prefer to encourage food production rather than commerce. Here are also chances for reflections which our readers can make for themselves.

Large-Scale Mortgage Transactions.

Passing now hurriedly from short loans for farming business to long-time loans for farming development and improvements, we come to the Land Mortgage Banks, which one finds in all the towns, and all more or less closely connected with some great state or national reservoir of ready money. If we remember correctly, we have already claimed that European people have a passion for banks. As we go along we learn to expect a bank in a hamlet as surely as a bakery, and we are approaching the conclusion that it is because of the bank that the bakery is so busy—but that is too deep a pond to fish in at this moment.

We wish rather to suggest that cheap money is just as abundant for permanent improvements as for current farming operations. This is accomplished by the land mortgage banks, which will get money for any line of improvement which promises greater production, up to one-half of the assessed value of the land on which the improvement is to be made. Banks doing this business are often given a loan of government money to operate with, and their work is much facilitated by the fact that as soon as a piece of land is accepted for a mortgage the registry thereof becomes the guaranteed title to the land itself. In this way a lender is free from all worry as to whether some claimant under an adverse title may gobble up the land, improvements and all. There can be no adverse claimant: the government proscribes him. This, then, completes the three-fold cord which makes land investment popular, namely: first, faith in farming; second, security to twice amount of loan; third, no question of title. This being the case, the land mortgage bank is only an agency to put the popular demand into effective working order. Take a concrete instance:

In a large city in Hungary there is a land mortgage bank founded in 1863. Its officers are patriotic philanthropists who receive no compensation: no one is paid except actual employees to do actual work: not to supervise or give advice. No dividends are declared on stock, and the whole profit goes to the reserve fund to cover losses which never seem to arrive. There were stock subscriptions in 1863 to the amount of $670,800, but subscribers paid in only 10% of that and were never called upon to pay more, and in 1875 were exempted from further payments because not needed; therefore, the original capital stock may be said to be practically canceled. In 1863 the Hungarian government gave $200,000 to help start the enterprise, and that also seems to have been lost in the shuffle and carries no obligation which has to be paid for; therefore, there are now no dividends to be paid to anybody. The institution now has a reserve fund of $10,202,177. Since its organization, mortgage loans aggregating $175,250,312 have been handled. This shows

pretty clearly that bankers cannot help making money, even when they try not to make any, and when they refuse to help themselves to the earnings, the bank gets full of money, even when the janitor has instructions to hit with a club every dollar which tries to break into the bank. There are also reflections here as to how beneficent a thing is a bank which tries to work for farmers for nothing under government favors—but readers can make such reflections for themselves. We are too busy trying to show how the old thing works.

A Hungarian land-owner who desires a loan on his land for improvements has to fill an application blank describing the land and what he proposes to do with the money; for the bank will not lend him the money to buy an automobile nor to send his family to the springs. The land and the feasibility of the proposed improvements are critically passed upon by experts of the bank, and there are honorary commissioners of the bank in each county who give an opinion without charge, so that the only cost is to get the evidence before them in proper form, and that is small. If the report is favorable, the bank grants a mortgage up to half the value of the land, not including the contemplated improvements. As soon as this is done, the bank issues bonds whose par value is equal to the face value of the mortgage and offers them for sale, through the Exchange. The rate of interest to the mortgage bond buyer is 4½%, but the borrower has to pay 4.85%, which includes the amortization cost—which means that this slight increase in the cost to the borrower is enough to cancel the mortgage in about 60 years, if he does not desire to make payments on it. He need not make any payments but the interest of 4.85%, because no one seems to care to have the principal paid so long as interest (including amortization) is regularly paid. The borrower does not, however, get the full face of the mortgage from the bank: he gets whatever the bonds sell for, but this is usually pretty close to par value, for the bonds are counted sure, being preferred to the bonds of the towns or the nation itself, because not liable to be affected by political conditions. Such bonds are favored by the state with exemption from taxation and by declaration that they are approved for investment of orphans' and other trust funds.

The foregoing is a rough outline of the operation of a large banking institution claiming to be operated for altruistic or philanthropic purposes, namely, to get for farm improvement and increase of food production all the money which can safely be used, and to get it at the cheapest possible cost by reducing all costs of the transaction to the minimum and by making the investment as attractive as possible to those who have idle money which they wish to get busy. There are hundreds of such institutions in the countries we are traversing. They are of various sizes, both as to scope of operation and sizes of loans they make. Sometimes they operate independently; sometimes they are federated into systems; but one purpose seems to rule with all, as just suggested. There seems to be no limit to the amount of money, for these bonds sell as freely and readily as merchandise.

European Attitude toward Development.

At this moment we seem to descry an attitude toward land development, both governmental and individual, which is somewhat different from the American attitude so far as we understand it. Europeans seems to be possessed with a passion for endowment or subsidy, or unpaid individual effort to increase food production. We hinted at this, and the underlying motives of it, in a previous writing. It may be also noted that this is possibly not so purely altruistic as it might seem at first sight. The exemption of mortgage bonds and of various co-operative accumulations from taxation is not so much a generous impulse to take nothing now as it is to get more later. The method is to tax every kind of an income, and it may be a rational affair. Little attention is paid to levying taxes to the potential value of land as to the actual production thereof. In California, for instance, we have an ambition to tax unimproved land at the same rate as adjacent improved land of the same quality, thinking thereby to force the owner to improve it or to sell it to those who will. We seem to see here a disposition to assess idle land at a nominal rate: in fact, we heard at one place that land was still taxed at an assessed valuation made in 1837, which seemed rather careless government—unless you remember that the higher-ups who naturally wish to hold onto idle land for forestry, hunting, and other joys, must have motives for low assessments, and unless you consider that anything that looks like income is made to carry every public burden. In our country we seem to be trying to tax values both going and coming, but we do not get as much out of it as Europe does by catching what is coming, and remembering the cost of royalties and armies and what-not among the higher-ups, it is clear that all that is done for the lower-downs is patriotically undertaken so that they can the better respond to the exigencies of taxation. Suppose, for instance, that a government endows a co-operative institution which enables a peasant to buy a cow at a low rate of interest on deferred payments, and a host of higher-ups serve without pay as advisers and promoters of the beneficent institution which brings it all about—what happens to the peasant after he gets the cow? Perhaps it is impertinent to ask such a question, but we apprehend that the peasant has to pay the last copper which the traffic will bear for every productive thing that cow does. And if that cow has a calf, can the peasant sell the veal? Of course he can—after the government tax stamp is properly placed upon it. And we imagine that other products are carefully looked after, just as the peasant's calf is; so it does not matter whether the land is still taxed on the valuation of 1837—the products are taxed on the valuation of 1913, and the more of them that you can get by promoted altruism or otherwise, the better the outlook for spending money the various European governments have. The income tax seems to go without saying in the countries we are visiting, and there is no fussing about exemptions or questions of net income. These governments put on their income in most detailed and itemized form. They collect it as the product begins to move, just as the railroads charge freight on fruit; and no matter what happens afterward, the tax is collected in one case just as the freight is in the other. No matter what the aforesaid calf sells for, or whether, lacking sale, the producer has to haul it home again and eat it, the carcass is decorated with the tax stamp, and perhaps it makes the producer's stew taste the better for it. This is apparently one reason why the governments are disposed to fix things so that there may be more calves produced—even to lending money without interest to help producers to buy more cows. It not only insures more taxes, but it gives employment to hosts of petty officials to put on the stamps, and it keeps another host of higher-up officials busy keeping the collectors busy and certifying that all taxes are patriotically paid.

These facts may also have some relation to another attitude of governments and financial institutions which we have probably cited before, namely, to lend money at lower interest rates to agricultural producers than to men of commerce. Traders simply turn things over, and middlemen therefore do not render service which is comparable with that of men who make new things. The ruling classes are, for this reason, anxious to rule out as many middlemen as possible and force them to put their capital and time into production. One way to do this is to show producers greater favors by giving them lower interest rates, long-time loans, and even to sink money in encouraging co-operation among producers so that they can get a better whack at the middlemen. It seems to be a very good proposition in economics, but we find ourselves continually wondering whether it is really as altruistic as it is claimed to be, as it is administered in Europe. It is, however, true that in our country we have shown too great financial favor to trading and too little to production, and have thus perhaps earned, in a way, the derisive title of a "nation of shop-keepers," which Europeans have given us. Our future problem may be to put a fairer burden upon busy shop-keepers, without building up such a host of idle middlemen who stand with open hands between the actual producers and the thrones. Our escape from this alternate evil must be found in the quality of American citizenship and the genius of American institutions. How can we secure the present European view of fairness and favor to producers and actuate it from higher motives? European motives may be the highest possible under European conditions. We do not intend to criticize them at all. In fact, we admire them whenever we seem to be able to catch the European point of view and understand the historic gait of development, but their ways are not our ways, and their thoughts not our thoughts. We started differently, with recognition of rights in men which they have not yet attained, and it may be a question whether, under their environment, they can ever attain them. For this reason we do not desire to reflect upon their motives, while we are trying to learn anything which may may be helpful in their methods.

A Higher Type of Farming Village.

As we rounded the head of the Adriatic and began to traverse the vast open spaces of Hungary, we caught sight of many farming villages of quite different type of the farming village from that which we condemned, too strongly perhaps, as a lot of agricultural tenement houses. We presume even these are better than the habitations of the peasants of earlier ages, and they may even be a gratifying phase of improvement of rural social life from that point of view, but in Hungary, Austria, and Germany, as we passed northward from the Mediterranean borders, we saw here and there villages of neat individual homes, cottages, gardens, and outbuildings which indicated that each family had its own place on the earth and its own social existence in its own home. These villages seemed to be American in general aspect, and better than American in cleanness and in beauty of environment of garden patches, shrubs, and trees. They were very often, in fact, gems of rural beauty which led the passer by to point and excalim appreciatively.

Such villages were surrounded by areas of small unfenced fields with different crops showing individual leasehold or ownership. In this respect they were similar in surroundings to the dormitory villages, but it seemed to us that when the

women and children came in from their long hours of field work, they must have had more satisfaction in their little separate cottages than they could ever realize from dismal rooms in huddled barracks of brick or stone. As for the satisfaction of the men, that is largely negligible. In European rural districts men do not seem to be of much account except to fill the winehouses and the armies. We were really surprised to find so few of them under sight or sunshine. As we flew through the desolate brick piles, said to be farming villages with population of thousands, men would be no more conspicuous than the male element would be in a herd of dairy cattle, and their function would seem to be similar, for they toiled not, neither did they spin. All our sympathies went out to the throng of silent, patient women whose only joy seen by us was in sailing to the country churches on Sundays in fantastic creations of headgear which looked like aeroplanes. Evidently, however, the joy of a ribbon makes all women kin, and we admired, with something like fascination, these wondrous millineries because they indicated that even hard and hopeless life could not quench the last spark of joy in a woman's heart. As they courtesied and smiled upon us as we passed, we found it hard to resist the temptation to cry out: "California can do for you a thing of which you cannot even dream."

And yet we found many among them who knew of California: some who knew California better than they knew the United States—though every one seemed to know America, and our fame as a regiment of visitors from the almost fabled continent of the west preceded us everywhere. They spread their simple feasts for us: they danced for us in their quaint peasant costumes: they forgot for the moment the darkness of their own lives in what they believed must be the brilliance of ours. One could but follow their example and forget the sadness of their lack in the moment of the merriment and joy which they generously wished to share with us.

Questions on Ettersburg Berries

Without exception everybody who has secured Ettersburg No. 80 strawberries through the PACIFIC RURAL PRESS appears to be more than pleased with the growth of the plants, the flavor of the berries and the whole proposition. There has, however, been an almost universal doubt with those who have not been experienced in berry growing, just how to manage the berry plants after they were growing, whether to cut off all the runners, only part of them, to let them send out all the runners they would, to pinch all the runners off some and let others bear all they would, or what ought to be done to get vigorous plants and enough sets for the next year to make as big a bed as desired. For everybody ought to know that for the sake of the plants it is not wise to let them produce all the runners they will make. In other words, you can't have your loaf and eat it too. You can let them produce lots of runners, but it is a sacrifice of fruit to do so.

Therefore, we wrote to Mr. Etter asking him to give us first hand a lot of information on this subject and he returns a list of typical questions which will show lots of things besides the treatment of runners. He further volunteers to answer through the RURAL PRESS other questions on strawberry growing that any of our readers care to ask. These questions and answers follow.

How far apart should Ettersburg No. 80 be planted?

About 28 to 30 inches each way in hill culture, as they are very vigorous growers.

How often should they be cultivated and what sort of cultivation is best?

Most strawberries prefer a compact subsoil. Shallow cultivation is best. A couple of inches of well stirred soil on the surface is about right. A wheel-hoe run through both ways once in 10 days or two weeks is excellent.

Should they be cultivated the entire season?

Yes. Don't neglect a strawberry plant after the heavy crop in April, May and June. Next year's crop depends very much indeed on building up the plant in late summer and autumn to get it in condition to produce fruit next year. The embryos of next year's blooms are formed this year. Where the crown borer is found, nothing favors their destructive work more than lack of proper cultivation.

Should the blossoms be pinched off of plants set during their first year out?

I have never practiced it. If it is necessary, I have yet to learn that such is the case with my hybrids. I have planted them at all times from New Years to the Fourth of July and they always take hold and grow and produce abundantly.

Should the runners be cut on young plants?

Yes. Cut frequently and develop a strong root and many crowned plants first. Even if plants are desired, this holds good for the forepart of the season. A strong vigorous plant will throw out numerous runners in a short time and soon have as many sets as it can support to good advantage. This applies more especially to these vigorous hybrids.

Are plants formed on late runners, and on the terminals as fruitful as sets from early runners?

Generally speaking, yes. If the runners set roots early, they may have some advantage. If they do not root as soon as they form leaves, they often do not make as strong plants as young runners that come late in the season.

How much difference will it make in the size of the plant at the end of the fruit season if all the runners are left to grow all the season?

Ordinarily, about 400% or more. That is, if all the runners are cut through the season, the plants so treated will be about five times as large as they would be if the runner were left to grow.

How much difference in the fruitfulness of the plant the following season?

As much or more difference than in the size of the plant. You can't let a calf suck a cow until he is a yearling and then expect to make good beef of the cow. The big, sleek, fat calf accounts for it all. If the plant has no runners to support, it will store up energy for next years fruiting.

Should these No. 80 plants be grown on well fertilized land?

Good cultivation on medium land would be more likely to give satisfying results than very rich land, especially if it is moist. This variety as with the hybrids in general, will thrive and luxuriate on land too poor to grow ordinary varieties successfully. My opinion is that more failures will result with amateur growers with their new plants from too much fertilizing and water than from lack of it.

How are your berries showing up this year at Ettersburg? Do they fully meet your expectations?

Yes. But we would have had about five times as many berries if we had not tried to grow all the runners last season.

Mr. Etter encloses the note of C. S. Thomas of Briceland, who states that he could not believe half what was said about Ettersburg berries until he got on the ground and saw them, that only by seeing them could they be appreciated. The merits of the plants are great, but from what our readers who have received the plants say, they can appreciate them even so far from their place of origin. In other words, they seem to be growing as excellently away from home as at Ettersburg itself.

CHEAP ORCHARD CULTIVATION.

To the Editor: I should be under obligations to you if you would, through the columns of the PACIFIC RURAL PRESS, give me your ideas as to the advisability of hoeing around young fruit trees instead of plowing, cultivating and harrowing. I have about 30 acres in fruit near Santa Rosa, the trees being three years old and all the work on the place being done for me by day labor. This is extremely costly, and of late I have had them hoe thoroughly by hand around each tree and let the plowing and cultivating go. Of course plenty of weeds have grown up between the trees but for a space of about three feet around each tree the ground is quite clear and the trees seem to be growing along nicely. I know it does not improve the appearance of the place, but if this method, which reduces costs quite a bit, would take care of things for a couple of years until I can get on the place myself I would much prefer to follow it. Will you be good enough to give me the benefit of your views on the matter as you have in the past on various other matters.—Subscriber, Santa Rosa.

We do not think you can get along as well either on growth or finance by doing without plowing and substituting only hand hoeing around the trees. Hoeing may be comparatively inexpensive when the ground is soft after plowing, but after the space between the trees has been packed down by the rains of winter and the vegetation of a year, your hoeing will be too hard to be inexpensive and the encroachments of the weeds will make plenty of it necessary. [illegible] subject from a money standpoint alone.

Going without plowing and cultivation would be most inadvisable for the sake of the trees. The weeds would pull off a fearful amount of moisture, if unchecked, and the great dry part between the rows would pull the moisture from the cultivated soil near the trees. Your best method all the way along is to plow in spring and have the ground worked into good shape and, we should say to use the weed cutter over the ground if the weeds get fractious. That certainly is a very inexpensive method of doing, and the cost of hoeing would pay for a lot of it. It will give you a soil mulch as well as killing the weeds. You will have to do a certain amount of cultivation when the trees grow up and it is better to stir that soil every year to prevent the roots from taking it up rather than letting the roots get into it and have to be cut, as would very likely be the case if the ground were unstirred, and the roots of the young trees were allowed to develop without hindrance.

Furthermore, moisture is too valuable to be permitted to go to waste through weeds or hard ground, and the crops you could have raised between the trees with that wasted moisture would more than pay for the cultivation and so you could have the cultivation with little expense. Have some horse beans put in for about 12 feet in each row next winter, or grow pumpkins, melons or something like that in the summer, and you will come out well financially, for your best plan is to cultivate, conserve moisture and use what moisture you don't need for the trees for other crops.

THE VALUE OF BROME GRASS.

To the Editor: Can you tell me if Brome Grass (Bromus inermis) has been tried in northern California, Oregon or Washington, and if so, with what success? Any additional information you can give me in regard to this grass in general and your opinion as to its merits will be greatly appreciated.—R. F. F., Carlotta, Humboldt county.

Answer by Prof. H. M. HALL, University of California.

Replying to the inquiry in regard to Brome Grass, I desire to submit the following information obtained largely from the publications of this Station and from a bulletin on the Stock Ranges of Northwestern California by Mr. Joseph Burtt-Davy (Bureau Plant Industry Bulletin, No. 12).

This grass has been tried out at a considerable number of stations in California with varying results. A correspondent at Arcata reported that it did not seed and that it grew more slowly than Rye-grass. On the other hand favorable reports come from Table Bluff and Yager in the same county and it has also been reported favorably at Pt. Arena. It is an early-winter growing sort with comparatively low nutritive value but is especially valuable because of the fact that it will grow in poor soil. It is especially suited to sandy pasture and meadow lands and is quite resistant to drought. It is a perennial grass, reproducing by a stout rootstock which makes it somewhat difficult to eradicate when it is not desired. One correspondent states that stock should be kept off the fields during the first year if it is desired to get a good stand.

A Talk on Insects.

To the Editor: I enclose in a separate package several kinds of lady birds which I gathered from one native California walnut tree, also larvae and cocoon, also a species of yellow aphis.

Please tell me in the columns of your paper in detail their method of breeding, as I find each species breeding with the other. I have also found this habit carried on in a lawn. Please name each one. The tree is almost destroyed. Has anyone else noticed this habit of mixing breeds? I did not before this summer.

Please explain whether they lay eggs in the process of reproduction. What relation is the old style cucumber bug (yellow wing and black spots) to the others. The Vedalia seems to be the weakest individual.—Subscriber, Los Angeles.

The contents of the bottle were pretty well mixed up when we examined them and we are not sure that we have all. You have the diabrotica soror, the green ladybird (so called, though it is not a ladybird). That is the common green beetle with black spots on its wings. Contrary to the habits of all the real ladybirds you enclosed, it is a leaf eater. The real ladybirds are flesh eaters, that is, they eat aphids and such insects. These and the diabrotica are members of the beetle group of insects.

The rounder ashy gray beetle with several spots on the wing covers is commonly called the ashy gray beetle. It varies more or less in color. There is also the two-spotted beetle; the Hippodamia convergens, the kind the State insectary sends out to melon growers; and the common red ladybird, which has no spots. We did not find any Vedalia present, and that is not likely to be present unless some cottony cushion scale is present. There are also the larvae of these real ladybirds present.

All of these have about the same general habits in breeding. The eggs are laid on the leaves or wherever the female lives. The eggs hatch and the small creature eats and grows until it becomes like those rough creatures about the size of a ladybird which you see walking around on the leaves and eating aphids. After getting full size these change into a dormant condition and take a more rounded form. Later a mature ladybird comes out. As they eat and live in about the same location they would propagate together in the sense that they would grow up side by side. However, there is no cross breeding between the different kinds, so that they do not breed together from that sense. Apparently there is nothing unusual in conditions in your place. The green insect, diabrotica, propagates in the same general way, but is harmful instead of beneficial and eats leaves instead of insects.

The aphids you sent are evidently the walnut aphids, though they were too badly spoiled to find them. These suck the juices from the walnut leaves or the plant on which they live and are doing the damage. The ladybirds are only eating them. These can lay eggs and the young develop from the time of hatching to maturity without great change other than shedding their skins now and then. Ordinarily, however, the aphids are born alive and grow rapidly to maturity. It might be interesting to state that the male is not needed when reproduction goes on in this way and generations of females can follow one another. The sterner sex is absent and unnecessary.

We are not sure what cucumber bug you mean. If it is the one with black stripes on a yellow wing, it is a beelte, like the diabrotica, related in nature and habit. If so, the term beetle and not bug should be used.

If you want a book which will enable you to identify common insects, possibly you can get the bulletin of the State Horticultural Commission, Sacramento, on California Insects, free on request. It is well illustrated and valuable.

TESTING SOILS FOR LIME.

To the Editor: What is the best way to test soil for lime?—C. T., San Francisco.

The best way is probably with litmus paper. Get a strip of neutral litmus and put it in the center of a moist ball of soil. Leave it there for several hours and if there is a change toward a pinkish color it indicates a deficiency in lime. If it turns at all blue it indicates that there is a fair supply of lime, and if there is no change it doesn't indicate much of anything except that there is neither a special oversupply nor a marked deficiency. In such a case it might be very advisable to try the application of lime as a fertilizer. You can also be quite sure of a good supply of lime by dropping a small amount of acid on a bit of soil and seeing bubbles form. If they come off, you have enough lime, but if they don't, you still may have enough, though not a very great amount. In other words, you can tell by the acid when there is lots of lime and by the litmus whether there is either a good deficiency or a good surplus, but you cannot tell much near the danger line. Of course, there are indications in the soil itself, for when a soil has been water-logged a long time it is fairly certain to lack lime, or when it runs together and cakes on top it lacks lime, and when it is just about right, it quite surely is well fixed with this substance. Except for these tests or indications the chemists will have to do the testing, and even better than that is a trial fertilization itself.

TEST FOR HUMUS.

To the Editor: Will you please give me a simple test by which I can ascertain the humus content of any soil? Will you tell me whether "gum" disease of citrus trees is contagious?—Mrs. D. M. E., Rialto.

We cannot give you any definite and accurate test for the humus content of the soil that everybody could practice. The simplest test that is at all definite is to wash out the lime in a soil with weak acid and then run ammonia water over what is left. A fairly close approximation can then be made to the amount of humus from the color of the ammonia water. There is hardly the apparatus handy for the ordinary individual to try this and it would need experience also, though with very little equipment or experience a person could tell about the humus in soils in this way.

There are other guides that can hardly be called tests. One is the color of the soil. Humus is black and so makes a soil black, so the darker the soil the more humus there is likely to be in it. Further the color comes out strongly when wet, though the humus may not show much when dry. Therefore if you moisten a bit of soil and it darkens strongly, the humus is probably good. If it keeps its color, probably the humus is scant. However, this test is only good when the soil has sufficient lime, as soils rich in humus but poor in lime, may be light colored, even when damp. Finally, humus is excellent in loosening up heavy soils and binding light, in giving "life" to a soil. Therefore, as a general guide to humus you can moisten some dry soil and watch the change of color, or you can judge from the conduct of the soil, which is the way an experienced farmer would do. Gum disease is not contagious. Perhaps some kinds of fungus which cause gumming may be carried from a gummy spot on a tree to a wound in another which would not gum if the fungus did not enter, but that is only a small part of the subject and the disease cannot be contagious in more than a very small degree of truth. Even that is infection, not contagion.

DIAGNOSING ORANGE TROUBLES.

To the Editor: Can you, and will you kindly tell what is probably wrong with the orange tree from which these leaves were taken.—W. S. T., Lordsburg.

We certainly will, if we can, but diagnosing tree troubles from the leaves is often not much better than having a witch doctor diagnose human diseases from a lock of the hair. There is not any trace of disease or insect injury on them though they look as if they were and had been rather dry. This evidently is not the trouble, as you would know is you were shy of irrigating water. There is a chance that nematode described recently in the University of California circular is to blame, though the leaves are not mottled. You might have your county horticultural commissioner or some University pathologist investigate. Your soil may be in bad shape some way or other, through oak root fungus, lack of available plant food, vegetable matter in the soil, poor tilth, insufficient moisture or some such reason. We can't do more with these leaves and pass it up for soil investigation on the spot.

DECIDUOUS FRUIT CROP ESTIMATE FOR LAST WEEK IN JUNE, 1913.

Counties.	Apricot Trees in Bearing	% of Full Crop	Apple Trees in Bearing	% of Full Crop	Prune Trees in Bearing	% of Full Crop	Peach Trees in Bearing	% of Full Crop	Pear Trees in Bearing	% of Full Crop	Acres in Table Grapes	% of Full Crop
Alameda	115,000	50	55,200	50	154,600	45	84,000	70	58,000	70	2,300	..
Butte	7,545	30	12,137	90	84,405	50	133,638	60	13,199	20	25	100
Colusa	17,000	30	6,500	..	92,500	80	13,000	50	7,000	75	300	60
Contra Costa	53,100	60	8,000	80	54,220	60	28,200	50	73,500	60	1,105	70
El Dorado	400	..	32,000	30	124,000	25	110,000	60	70,000	30	200	80
Fresno	145,600	20	20,000	..	83,000	90	3,270,000	80	.....	..	2,340	85
Humboldt	....	..	.....	100	.....	75	.....	80	.....	80	.....	..
Kern	25,000	..	12,000	..	4,100	..	50,000	..	1,500	..	.....	..
Kings	79,600	35	500	100	6,860	100	386,200	100	.....	..	.....	100
Lake	1,975	10	9,872	40	29,622	35	5,829	25	24,850	60	48	100
Los Angeles	200,300	80	5,150	..	61,710	..	218,720	80	75,000	..	81	..
Madera	10,000	..	11,000	..	.....	..	70,000	..	.....	..	135	..
Mendocino	500	..	2,000	50	20,000	50	10,000	25	10,000	50	250	..
Merced	8,250	10	4,500	80	1,525	..	148,401	40	4,250	50	475	75
Monterey	25,000	150	70,000	50	3,350	70	9,500	100	6,200	75	150	..
Napa	17,000	10	45,000	50	91,180	50	107,880	10	69,120	70	.....	80
Nevada	170	25	12,270	40	5,800	50	12,760	60	36,270	40	210	100
Orange	167,240	30	12,795	100	17,320	100	38,350	125	.....	100	.....	90
Placer	7,485	..	19,480	75	20,465	70	994,250	75	104,600	75	1,765	80
Riverside	66,317	100	5,087	85	22,138	85	45,293	100	12,151	80	311	90
Sacramento	20,000	60	16,000	60	100,000	60	65,000	80	220,000	75	6,500	90
San Benito	35,000	60	17,000	50	125,000	50	15,000	75	6,000	..	25	..
San Bernardino	26,200	85	22,680	90	2,800	..	8,250	95	18,500	..	749	90
San Diego	9,140	85	20,200	80	3,240	..	8,760	100	2,318	..	1,500	100
San Joaquin	70,540	35	13,500	100	52,815	80	234,130	60	27,425	100	26,252	50
Santa Barbara	3,450	100	2,450	100	1,250	100	2,325	100	715	100	526	..
Santa Clara	544,000	50	20,200	70	5,257,900	60	592,500	40	126,200	60	417	..
Santa Cruz	56,440	50	590,878	20	99,096	60	10,594	..	14,286	70	249	..
Shasta	650	..	20,000	50	87,500	65	46,000	30	30,000	35	150	75
Solano	237,800	50	3,450	..	465,000	50	490,600	100	203,000	85	495	90
Sonoma	23,450	70	234,120	60	598,040	65	28,670	70	81,270	60	650	100
Stanislaus	9,050	10	4,372	100	7,190	50	100,410	35	3,620	50	162	50
Sutter	4,804	95	4,700	..	39,922	75	130,854	80	11,309	..	130	..
Tehama	64,410	..	18,650	..	115,700	..	679,400	..	63,050	..	100	..
Tulare	32,075	..	13,320	75	137,935	50	348,170	45	3,287	..	5,825	90
Ventura	26,000	40	8,100	100	19,000	..	7,800	80	.....	..	.....	..
Yolo	121,520	40	2,145	..	93,800	60	136,600	75	51,000	80	300	70
Yuba	18,750	30	7,250	50	5,055	40	69,555	90	14,450	60	.....	50

Idaho Frost Alarm System.

The highly developed method of community frost-fighting at Pomona has aroused admiration in all sections where orchard heating is practiced. It is therefore interesting to hear of the system by which a Wood River orchard company, Idaho, warns of frosts in its orchards by means of an automatic frost indicator and the telephone. It is a well known fact that one night of frost may spoil an entire season's crop. The Wood river company, having this in mind, decided to take measures whereby it could get ample warning of the approach of frost and make preparations in time to ward off its bad effects on the apple crop.

Thermometers of the dial type are placed in each of the four corners of the valley. On each dial face there is a platinum contact which can be moved to any point on the dial, while another contact point is located on the indicator-needle. For orchard use, the dial contact point is placed at a temperature indicating a danger of serious frost. When the temperature drops to this point, the two contact points come together and close a local circuit. In this local circuit there is an interrupter or pole changer arranged to send an alternating current over wires which connect with a Western Electric No. 1800 sectional unit type switchboard at the main office of the company. This alternating current operates a signal on the switchboard and indicates to the operator that frost is near at hand. As the thermometers are placed at the four cardinal points of the compass, it becomes a simple matter to determine from what direction the frost is coming.

The switchboard operator having received the signal, calls each of the orchard men who would be affected by the frost. They in turn go through their orchards and light smudge pots which have been installed there at the beginning of the season when frosts are prevalent. The time that elapses from the instant that the thermometer circuit is closed until the last orchard man is notified is not over five or ten minutes at the utmost, and much of the fruit crop can be saved in this way where frost would ordinarily play havoc with it.

The present equipment of the switchboard is arranged for twenty lines. When the necessity for more lines presents itself, another unit containing equipment for the additional lines may be added, the switchboard being designed on the sectional unit bookcase plan.

The farmers have found the frost-indicator-telephone system to be of great value to them, not alone from a protective standpoint, but from the standpoint of freedom from worry. The farmer can go to bed at night during the frost periods with a peaceful mind, assured that his crops are well protected. This affords another illustration of the remarkable adaptability of the telephone to every phase of commercial activity.

WANT COMMISSIONER FOR CITY.

It is an old story that the cities depend upon the country round about for their existence and for whatever prosperity they have. A new illustration of this is shown in the fact that one of the most important single matters before the San Francisco supervisors today is the appointment of a county horticultural commissioner. The supervisors don't want a hor-

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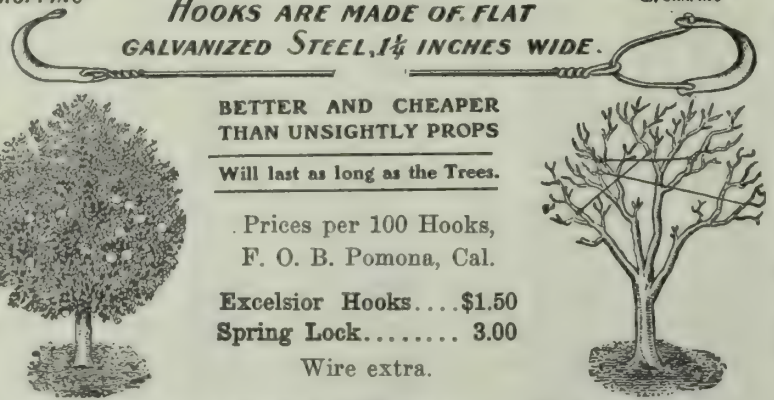

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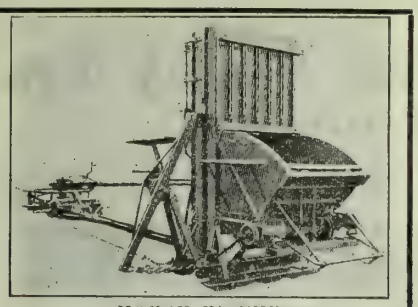

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ticultural commissioner, some of the big seedsmen and commission houses are after one with all the effort they can put into it, and the State Commissioner and Chief Quarantine Officer Frederick Maskew are working tooth and nail for it. You would think that San Francisco needed a horticultural commissioner about as much as an Eskimo needed a palm-leaf fan, but that just shows how the country is all-important after all. And as far as that goes, the agricultural districts of the State have a good deal at stake, too. The proposition is this: Seedsmen and commission houses need a commissioner to make the red tape run smoothly. People everywhere have found that it pays to keep out injurious insects and plant diseases, and some other States and countries that get fruit, seeds and nursery stock shipped from San Francisco won't receive it without a certificate of inspection. If there is no inspector, where is the certificate coming from? Therefore, the shippers want a commissioner. The fruit-growing counties also need the commissioner. It matters not a bit to San Franciscans, that is directly, if the lemons they use are covered with red or purple scale or not, so some pretty bad-looking stuff frequently comes in. Much of this may be shipped to other counties without hindrance, or a visitor may buy infected fruit, or perhaps a tree or so for his home yard, carry it home with him and thus establish an injurious insect or a plant disease in his district. As long as San Francisco is the distributing point to and from most of the State, the matter of plant pests is a vital question in some lines of business, and bad material should be prevented from coming in altogether, and a commissioner would bar it out. The supervisors are men who know but little about horticulture and care less, mostly, and they want the money to spend on something else.

LASSEN COUNTY NOTES.

Near Janesville, on the west side of Honey Lake valley, is the ranch of Peterson and McDuffy, both young, energetic and progressive men. They have a fine herd of Jersey cattle and are dairying to a considerable extent. Their herd was established in 1896 by Mr. Peterson's father. The present herd was mostly sired by Lassen King 22414, A. J. C. C., and is now headed by Lassen Fox out of Lassen Queen. Also Lillies Valet of L., bred by Locke & Co., of Lockford, San Joaquin county. The intention is to have nothing but purebred stock on the ranch. They have also a fine strain of purebred Berkshires, headed by Robins Royal Masterpiece. These young men are proving that fewer head of purebred stock pays, and other ranchers admit that they would have to come to it and raise better stock, as the ranges were gone, and closer attention could be given to the herds. J. Christie has a fine ranch at Janesville and the most pretentious apple orchard we have seen. There are 17 acres in apples, peaches, pears and plums. The trees were loaded, and we were assured the fruit was all of superior quality. The entire west side of the valley is adapted to fruit, and we saw many good orchards, all promising an abundant crop.

Alfalfa is not grown as extensively on the west side as around Standish, but nearly every ranch visited had some growing. A great many farmers complained that things were not up to normal because of the drouth of the last two seasons, but certainly no one was suffering very much, and it is our opinion that the entire country is in a very prosperous condition, and opportunities for new development are just opening up all along the line. J. L. TRIBBY.

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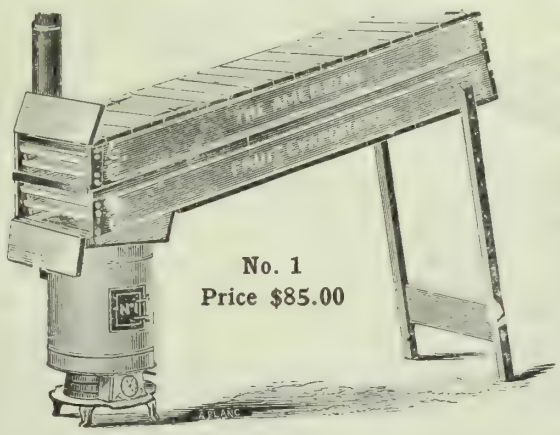

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The Orange in the West Indies.

[Written for the PACIFIC RURAL PRESS by LEWIS R. FREEMAN, Pasadena.]

(See Last Issue.)

As there was no real rush about making a start, we sat on the veranda for half an hour while M———, now quite seriously, told me how he had stolen a march on his brother orange growers. The orange trees, some hundreds of acres of them and the best obtainable on the island, were planted first, following which, according to a suggestion contained in a pamphlet of the Government Experiment Station at Mayaguez, pineapples were planted between the rows to help defray the expenses of cultivation. It was this which gave M——— his big idea. There was still a lot of bare unplanted ground left, and if pineapples, why not bananas? Look at the money they made in Jamaica out of bananas; it was criminal to miss such a chance, and so the rest of the bare ground between the rows of pineapples and oranges had been planted full of bananas. "And now look at them!" M———'s face was fairly shining with enthusiasm.

I looked at the bananas as I was bidden—I couldn't very well look at anything else—and I repeated in words my thoughts of the morning, that I had never seen a more pleasing sight. M———'s face glowed with half-suppressed pride. After a decent interval I suggested that we go down and hunt for the orange grove.

M——— found the first tree in about five minutes, not because he was a better woodsman than I, but because he knew where to look and what to look for. I went groping about through the sunless depths with my head in the air looking for a tree; M——— searched with bowed head and eyes on the ground, like a man who sought mushrooms or lost glasses. Moreover, I was looking for something green, whereas the plant M——— finally lighted on was a whitish whip of about the complexion of the fungous growths one finds in old cellars. Around it twined a dewy-skinned creeper which terminated up among the white leaves in a brilliant scarlet flower. M——— hailed it with a cry of delight and snapped off the soft top of the orange tree in extracting it for his buttonhole.

Of course there were many places where trees had been set where no trees were to be found, and, as no sunlight ever penetrated the thick shade of the banana fronds, all we did find were of the anaemic appearance I noted in the first one. Most of them, too, were strangling in the embrace of the dewey-skinned creepers.

After we had gone back to the house and enjoyed a shower and a change, M——— told me that the most of the pineapples had died within the first six months; didn't seem to get on with the bananas at all. But the orange trees were now two years old, he continued, and oranges should begin to bear at three. These of his seemed rather backward as compared with those of some of his neighbors; but, then, there were the bananas to compensate.

And the shame of it was that no one had told that good fellow, at least convincingly enough to make him believe it, that, while the Porto Rican banana is one of the most beautiful plants of its kind in the tropics, its fruit does not ripen satisfactorily from a bunch cut green, making it, therefore, seldom marketable over twenty-four hours' from the plantation.

From what I saw and heard in Porto Rico, there are only too many trying to grow fruit in similar fashion, who cannot so well stand the result of their inexperience, or caprices, as my good friend M———.

I will conclude with a few more facts regarding the conditions, good and bad, which affect the Porto Rican citrus industry. There are, of course, some experienced men growing oranges on the island, and it is on the quality of the fruit produced in their orchards, as well as the very favorable results obtained at the experiment stations, that the hope for the future of the industry is based. The best oranges I saw were large, thin-skinned, and of good flavor, and it is from certain small shipments of such fruit as this that really favorable reports have been received from New York.

Of the 10,000 acres estimated to be under citrus fruits in Porto Rico, 70% is in oranges, 25% in grapefruit and 5% in lemons. The grape fruit is of a really high class, and has already established a demand for itself in New York. The lemons are, as yet, small and bitter, and those I saw appeared to have been poorly cured. The varieties of oranges under cultivation include the Washington Navel, the Late Valencia, the Late Hart, the Ruby, the Pineapple, the Enterprise Seedless, and the Jaffa.

The grape fruits are the Marsh Seedless, the Thomson Seedless, the Duncan, Walters, and Bowen. Both grape fruit and orange are budded on the native wild lemon in the nurseries to produce the

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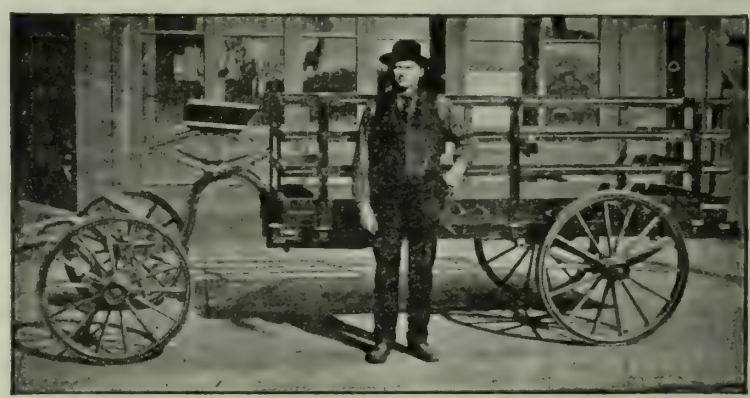
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tree that is ultimately set out, a practice which local experience has shown to be attended with the best results. Trees are set about as in California—around 70 to the acre. Prices for nursery stock appears to be lower than in California. I saw budded trees ready for setting advertised as low as $25 a hundred.

No estimate can be made of the quantity of good orange land in the island until the industry has found its place. Orange land may now be bought at from $25 to $150 per acre. Very roughly speaking, I should say that this is such land as, without water, would command about three times those prices in California.

There has, so far been little provision for irrigation in Porto Rico, and apparently there is not great necessity for it, the steady rains of the windward side of the island, where the oranges are almost exclusively grown, providing, it is claimed, sufficient moisture. Should irrigation ever become imperative, or even be deemed advantageous, there is artesian water to be struck at small depths in many parts of the orange districts, while there is also practically unlimited surface flow from which diversion can be made at a comparatively small cost.

In connection with the question of the quality of the orange land offered, and the sufficiency of the regular rainfall as opposed to artificial irrigation, I will say that the most remarkable feature of all the properly cared for groves I saw was the great size of the young trees. Trees of three and four years impressed me as being 50 to 100% larger than the average in California. Whether this is in favor of, or against, the production of good fruit, I cannot say. It at least proves the quality of the land and the sufficiency of the rainfall.

In the matter of labor, it is customary to pay from 40 to 50 cents a day for a peon who will work longer hours—though he may accomplish less—that the man who in California demands from $1.50 to $2. There, as here, men may be hired more cheaply by the month. Owing to the extended rainy season, probably considerably more labor will have to be expended in cultivation than in California, though the cost of it should foot up a good deal less.

Finally, regarding pests and climatic conditions unfavorable to orange culture: They have a scale or two in Porto Rico—a species of the black variety being the most troublesome—and an ant which also does some damage. Both may easily be disposed of by spraying, but this must be kept up steadily and the operation is probably more expensive than in California.

The steady force of the northeast Trades, if unbroken, is a big factor in keeping a young orchard back, and, in exposed localities, there are instances where it has given the tree a slant inward of fully 45°, a circumstance which may make picking more expeditious some day, but probably not enough so to compensate for the time that will have to be allowed to elapse before there is anything to pick. This trouble can be easily and cheaply obviated by "wind-breaks" of bamboo or palms.

There are some who would reckon the West Indian hurricane—which centers on Cuba and Jamaica, but occasionally strikes as far east as Porto Rico—as among the menaces to be reckoned with in engaging in any kind of agricultural industry in Porto Rico. It is true that there have been some terrible hurricanes in the island, but these have come so irregularly and at such widely separated intervals, that the risk to the property of any one individual is almost negligible. In any event, the risk is less than the Middle Western farmers run from cyclones.

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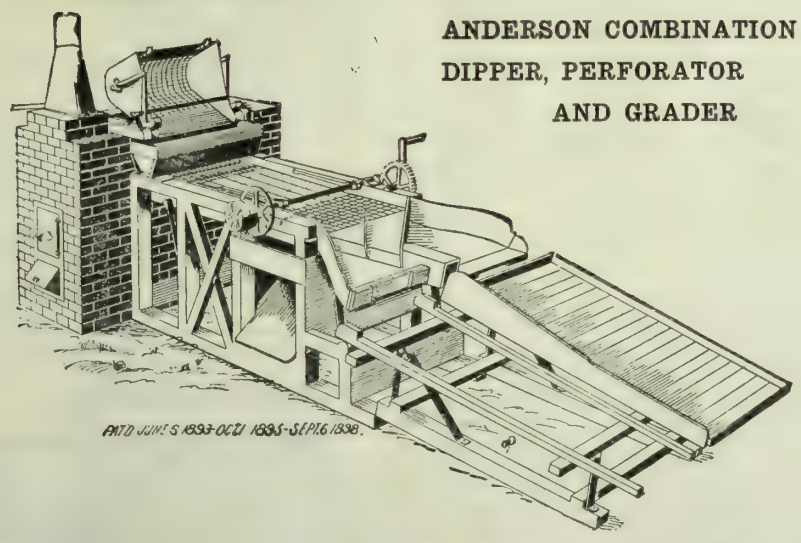

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AGRICULTURAL REVIEW.

With the Fruit Men.

It is stated that should the proposal of the United States Senate to increase the tax on brandies used in the fortifying of wines be carried out all the contracts for grapes entered into by the growers with the California Wine Association will be rendered null and void. Thus it may be seen that should the proposal to increase the brandy tax be successful the action will spell disaster for the grape growers of this State, who since the signing of their contracts with the California Wine Association and other manufacturing concerns have been resting happily in the thought that they were certain to receive $10 a ton for their grapes and thus be enabled to enjoy this season the first fair profits for their product that they have had in years.

Land near Olive, Orange county, that was set to orchards last year is now valued at $1,500 per acre. It was not the orchard however, that made the big prices. Oil was discovered under the ground in adjoining territory.

In Sutter county buyers are said to be paying 4 cents for prunes, cling peaches $32.50 per ton. Most of the wine grapes have been contracted at $10 and $12 per ton.

The Associated Raisin Company has completed the lease and taken possession of the big seeding plant of the Pacific Coast Seeded Raisin Co. at Fresno. Work on last year's raisins is to commence at once.

The latest seedless tomato story comes from Porterville. The discoverer claims his new tomato has no seeds and is more solid than the ordinary varieties.

At a meeting of the executive committee of the El Dorado County Standardized Fruit Alliance last week, two inspectors were named to inforce the by-laws and mark the fruit shipped from Placerville this season. They are J. Madden, to be located at the Producers' Fruit Company's warehouse, and Harry Miller, at the Earl Fruit Company's warehouse. The rules adopted last November provide for all packages being of the standard size, weight, and contents required by the New York market.

Consul General A. Gaulin, of Marseille, France, reports that, according to reliable reports from various sources, there is every indication of a fairly large olive crop in the Marseille district this year. The trees are in good condition and the outlook is most promising.

Armand Gridley, Butte county, reports the peach crop will make about 60 per cent of normal, which is very good considering the prospects since the frost in April.

The almond crop of Durham is nearly ready for harvest, which may be sold by the local association of growers independently of the State association.

A dispatch from Chico states that packers are already buying next year's crop of prunes in that locality, in order to get ahead of the annual pool which controls a large part of the crop there.

Consul Harold C. Huggins at Nagasaki, Japan, in calling attention to the recent shipment of 1,000 boxes of navel oranges from Japan to California, due to the present condition of the orange markets in this state, notifies the California shippers that in the future they may expect competition from Japan in the markets of Australia and New Zealand. He describes the Japanese navel orange as good in quality, thin-skinned and sweet.

A note was received this week from Leonard Coates the well known nurseryman of Morganhill, who has just returned from an extended trip to England and through part of Europe. Mr. Coates says that he has many notes on fruit culture abroad with illustrations, which we trust to be able to give to RURAL PRESS readers.

The Gravenstein apple crop in the Sebastopol section promises to be early this season, the fruit already taking on good color. Buyers are in the field contracting.

W. O. Randolph of the Randolph Fruit Company, while at Porterville recently stated that in his opinion the orange crop the coming season would amount to 30,000 cars from southern California.

Agricultural Notes.

These are busy times down on the borders of Tulare lake. Harvest of the immense yield of grain is now in progress. There are already several big combined harvesters at work and others are starting. The hauling of grain to Stratford, Corcoran and other towns near the lake, soon will begin. A large area also is to be seeded to corn and hardly a day goes by but what one or more corn planting machines, with the necessary equipment of teams, etc., passes through Stratford on the way to the lake region.—Hanford Journal.

A syndicate of Chinese has purchased a part of Venice Island in the Delta region near Stockton. A deed of purchase was recorded last week stating the amount paid to be $37,485. It is thought that the land was bought at this time to get in ahead of the anti-alien law. Venice island is adapted to the growing of beans, potatoes and asparagus.

Rain commenced at 9 o'clock on Thursday, June 26th, near Oxnard, continued the remainder of the day, causing considerable uneasiness among hay men, as all of the hay in that section was still in the field. Damage will not be as great as first supposed, but dry feed on the pastures is damaged considerably. Beans and corn may benefit some.

The unlooked for rain in the Chico section last week caused considerable damage to hay, but was a help to fruit growers. The grain crop of that district is turning out much better than expected. Some fields have yielded three tons of wheat per acre.

The hop crop of the State will be some less than last year. However, Sonoma county expects to harvest a good average yield. Prices at present are around 13 cents per pound.

Owing to water development near Porterville farmers there are seeding the second field crop for the year, and a great deal of corn is being planted.

A dispatch from Chico is authority for the statement that the Stanford ranch at Vina is increasing its alfalfa acreage. Also that the grape acreage, though smaller, will produce 2000 tons more of wine grapes than last year. The peach crop on this ranch will not be quite up to a normal yield.

Marin and Sonoma counties are harvesting the heaviest hay crop that they have produced in over 20 years. The hay has cured fine and is well filled. The Sonoma Land Company has between 2000 and 2500 acres that will average better than two tons to the acre. A number of smaller tracts will average four tons to the acre.

The Woodland Mail states that the barley crop in that section will be larger than that of last year, while the wheat crop will be less than normal. In District 108 the barley crop is stated to be averaging 25 sacks to the acre.

Consideration for farmers who actually cultivate land on government reclamation projects, as against speculators, is announced by Secretary Lane of the Interior Department. He has ordered a temporary reduction to one-third of the

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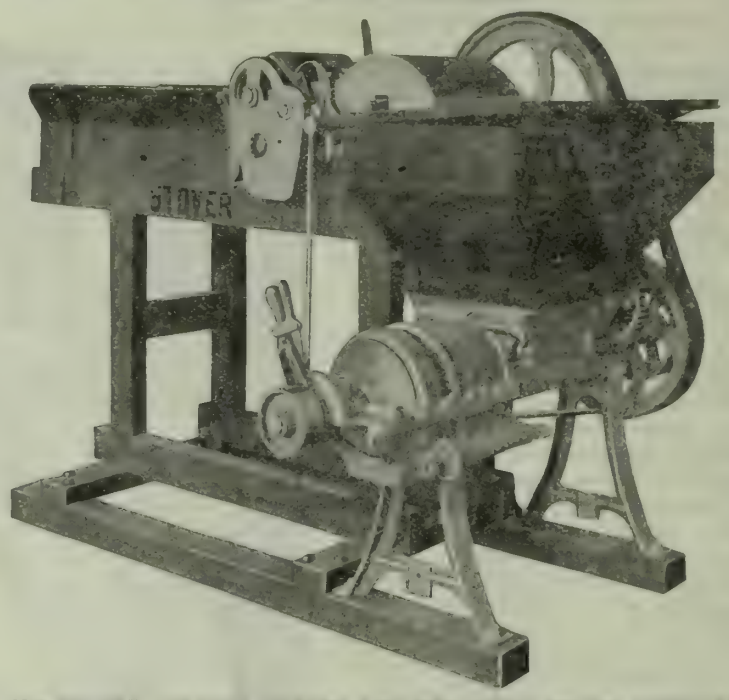

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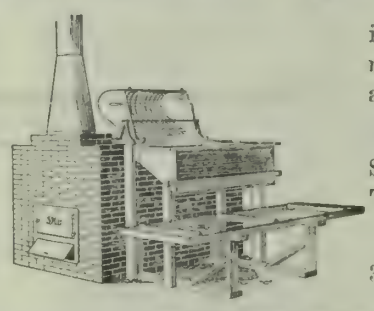

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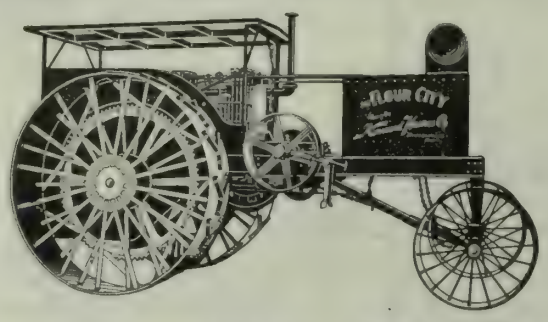

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amount due from present settlers on final building installments, provided no payment shall be less than 50 cents an acre. The unpaid balance will be added to the last installments for water right applications. Those who have paid these charges may have credits either on their next annual installments or on operation and maintenance charges now due.

Land Development.

The J. W. Browning ranch of 10,283 acres was sold last week for about $500,000. This land lies in the north end of the Sutter basin and will be helped very much by the work being done in that district by the Armour interests.

The tract of 1,600 acres of land on the Sand Creek highway, eighteen miles from Reedley is being rapidly colonized and most of the property planted to apples, for which it is particularly adapted.

A big tract of land located in Tulare county, on the road to U. S. Grant National Park, is being rapidly colonized by people who will set out the most of the land to oranges.

Last week there was delivered to the Oro Loma ranch south of Los Banos, more than twenty-five tons of spineless cactus cuttings, to be planted out on well prepared soil. More cuttings are still to come which will make this one of the largest cactus farms in the country.

A tract of 1,250 acres of land near Honcut, Butte county, has recently been purchased by a Los Angeles party, who will colonize it.

Fair Prices for Fruit.

In another column we print the fruit crop estimate as it appears at this time, showing less than an average crop year in this State. From the marketing side, all that can be said, is that prices promise a fair return to the grower. While production will not be as large as last year, yet the carry over in some lines, the high exchange rates on exporting and the general tightness of money the world over, means that there will be little if any speculation and prices will of necessity be close during the coming season.

Apricots are not selling rapidly just now as the canners seem to have about all they need contracted for, and the cured fruit men think the bulk of the crop will move at from 10 to 12 cents dried. Last week some canners paid as high as $65 per ton green for first-class picked orchards. Now these prices have fallen to $50 per ton and even lower.

Peaches will make a good crop—not as heavy as last year—but still there will be a fair yield. To this yield must be added a heavy carry over, and now that most canners have contracted for their needs the fruit left must be dried or sold ripe. The California Cured Fruit Association thinks peaches will reach 6 or 7 cents, but many brokers say that the bulk of the crop will not average over 4½ cents dried. Of course specially fine stock will bring more money.

The prune situation is also in fair shape, though growers will probably do better in this line than in apricots and peaches. One exporter furnished us the following figures as to crop production this year:

	1913 pounds	1912 pounds
Bosina-Servia	120,000,000	30,000,000
France	20,000,000	30,000,000
Oregon	25,000,000	10,000,000
California	120,000,000	210,000,000
Carry over	40,000,000	50,000,000
Total	325,000,000	330,000,000

At this time the demand is not as heavy as it was for the past six weeks, packers have filled pressing orders and seem to be waiting. Possibly prunes may sell as high as 5 cents on the four size base, but the chances are that the bulk of the crop will move at near the 4 cent mark.

Shipments of green fruit have been much heavier to June 28 this season than last, there having been 1,051 cars of cherries, apricots, peaches, plums and pears shipped as against 517 cars to same date last year.

FORM NEW ASSOCIATION

To the Editor: At a meeting of poultrymen and poultrywomen held Wednesday, June 25th, in Sacramento, a poultry association was organized, to be known as the Sacramento Poultry Association. It is the purpose of this organization to work for the interests of poultry raisers, to create greater interest in this industry, which in this section is in its infancy; to encourage the breeding of better poultry and more of it. The association will not attempt to draw the line between the fancy and utility but will work for their mutual benefit.

The small breeder as well as the large; the city or back-lot poultry raiser as well as the specialist will be encouraged to join. The members of the association have instructed the Secretary to write your valuable paper requesting a brief mention of the organization in your columns.—C. A. WILKINS, Secretary Sacramento Poultry Association.

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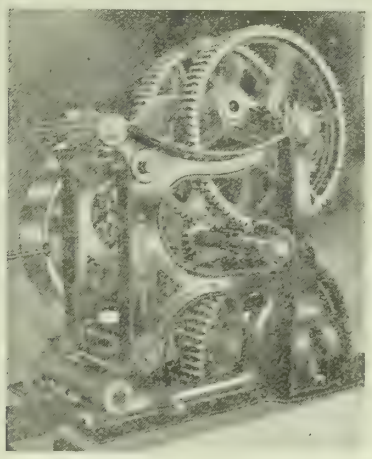

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Swine in America, Coburn	2.50
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PACIFIC RURAL PRESS,
420 Market St., San Francisco.

Producing Quality Cream.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

As the dairy industry of the State grows one finds a big improvement in the methods used.

Along lines of improvement is the subject of the grading of cream, and while it has been given a good deal of attention by progressive dairymen, it should receive more notice judging by the results obtained where in force.

Up at Willows, Glenn County, the creamery at that place uses a system whereby a dairyman's fat is paid for according to its quality.

That is to say, a dairyman who uses the ordinary methods of milking, separating and handling of his milk receives the ordinary price for his fat. He who uses more sanitary methods and thereby produces a fat of superior quality is rewarded for his work by a one, two or three cent premium over the first named party, the premium being governed by the amount of bacteria in the fat.

Thus if Jones does not take any special care with his milk he will not receive as much for each pound of fat as Smith, his neighbor, who has taken precautions to see that his fat has been handled in a perfectly clean and sanitary manner.

As we all know most creamery men in other localities have to pay the Joneses as much as they do the Smiths, so other than their pride, there is no incentive for the Smiths to take the extra time and work for the better product.

This condition is therefore neither fair for the better dairy man nor the creamery either, for no butter maker can make first-class butter from a poor quality of cream.

To find out how much extra work was required by the dairyman in order to receive the premiums before mentioned we visited the ranch owned by the Tweed Ranch and Land Company.

Mr. Tweed having been born and raised in Denmark, was able to quickly take up all of the better methods of dairying in this country as such things as grading cream, cow testing associations, etc., had long been in use there.

As soon as the Williams Creamery started to grade its cream, Mr. Tweed went in for better prices the result being that he gets three cents above the ordinary quotation.

In order to explain how the extra price is obtained one should start with the barn, the main features of which are good ventilation, cement floors and drains and a plentiful supply of water for thorough flushing and cleaning out. When the cows are milked a bucket shaped somewhat like a coal skuttle is used, having two open spaces over which a piece of cheese cloth is stretched. In this way no dirt from the cow's udder gets into the bucket.

When the milker empties this bucket the milk is poured into an ordinary milk can, the top of which contains a metal holder with two wire screens and then a cheese cloth strainer. These screens are held in place by metal bands which slip down over the bottom of metal holder and screens. With this contrivance the milk is further cleansed and when a can is full the whole strainer can be taken out and put on top of the next can so it is no extra trouble other than the washing of the screen along with the cans, etc., once a day. When the cans are full they are taken on a two wheeled truck to the separator house which is located some distance from the barn.

This house is made of studding, covered outside with rustic and lined inside with tongue and grooved lumber painted white.

The building is divided into two rooms by a partition, one being smaller than the other which is used for a cooling room. These ventilators are used to give ventilation in this room, one in the ceiling, one about two feet long and eight inches wide in the bottom which is cut through into the outside of the building and another one the same size near the bottom which goes into the main separator room. These openings are all screened to keep out flies, the door being moved similar to a refrigerator door and leading into the separator room.

As the partition is made with double walls this with the ventilating system makes a good, cool room. The floors are made of concrete and drained so that by hosing off they are kept perfectly clean, screen doors being used to the outside. A small steam boiler is used for supplying hot water for washing and two stationary tubs are used for washing the buckets, cans and separator parts.

An ordinary separator is used, power being furnished by a small electric motor which sets right on the separator. As the cream comes from the separator it is run over a water cooler where it is thoroughly cooled. As soon as the separating is done, the cans are set into the cooling room and a wet cloth thrown over them. In this way the cream is kept at a very low temperature until about 11 o'clock, when a cloth cover which was made especially for that purpose is put around each can and thoroughly wet with water.

The cans are then loaded into a wagon or buggy and hauled into the creamery. In this way the cream reaches the creamery in a perfectly clean, sweet and cool condition.

After the separating is finished all cans, buckets and separator parts are well scalded and washed and then put out into the sun to dry.

The floors and walls are also kept clean with warm water, the drain carrying this waste water on out some distance from the separator house.

While no doubt a good many may use equally as good methods as Mr. Tweed does, there are very few who obtain the extra price for cleanliness and as it pays on this ranch it would seem that those who wish to turn out a superior product should demand a system of grading cream in all localities.

SHEEP AS A BY-PRODUCT ON ALFALFA RANCHES

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

When a new owner moves onto irrigated land he proceeds to put the place under more intensive cultivation, such as fruit growing in its different branches, or else seeds it to alfalfa and starts either a dairy or hay ranch or sells the hay. Everybody knows that this is a fine thing for the State as a whole for a much larger number of persons obtain their living from the land, it stimulates business in the cities, and in many ways is a benefit.

This practice will continue, as it should, but as none of the large holdings are sub-divided it may be well to introduce some different methods than those now pursued in our alfalfa districts if farmers are to get the most from their investment.

At present our alfalfa growers find it more profitable generally to make the ranch pay through the cream check, with hogs as a by-product and it is generally accepted that by this method not only the maximum profits may be realized from the product sold, but also that through the fertilizing obtained by the cow the land itself may be built up instead of torn down.

That another farm arrival seldom kept at present will eventually come into its own seems probable and that is the sheep.

Our reasons for this belief are taken from what we learned on a trip through Tehama County this summer. That county has for years been considered the stronghold of the sheep industry in this State but the continual rise in land values has made it impossible to carry on the business as in former years.

To illustrate, the practice among sheep growers has been to own a large tract of valley land which would support about 1½ head of sheep to the acre during late years. If a man had 15,000 sheep then he needed 10,000 acres of land.

This is called the winter quarters as the stock as taken into the mountains during the summer months as soon as snow and bad weather permit, and in turn are brought back as soon as bad weather starts in the fall. Although these winter feeding ranches do not produce much feed in their present uncultivated state, they will by ordinary small farm cultivation produce good fruit or other crops and as a consequence the sheep man finds his land valued at from $30 upwards where formally it was only worth $3 or $4 for grazing.

To make interest on such priced land with sheep is impossible under the old sheep growing system so the best thing for him to do financially is to sell out. That is exactly what is being done around Red Bluff with the result that the county will be short 50,000 of sheep head by next fall of their last year's total.

We were told by several of the larger growers that it was only a matter of a short time until the present methods of sheep growing would be wiped out and that our mutton supply as well as wool would have to come from the small farmer in the near future.

Conditions have been such in the east that the mutton and wool grown there comes mostly from the average sized ranch and as the same situation will no doubt soon be confronted in this State it may be well for farmers to take a little more interest along sheep lines.

Most everyone who has had experience with sheep agree that they will come nearer to living on the waste spots of a ranch than any other animal and while they do not require as much attention in our mild climate as they do in the east, to make a success of them requires some knowledge of their habits the same as for other stock. It may be interesting along this line of knowing how one man has made a by-product of sheep on an alfalfa ranch. Mr. J. N. Morris of Tehama, is the one we speak of and by keeping sheep a few months of the year he usually makes about $1.50 a head.

His system is to buy about 400 head in the fall of the year after the fall clip about October first. They are run on alfalfa stubble and used to clean up any weeds on the ditch banks, fence corners, etc. As this is usually after the last cutting of alfalfa they are able to rustle a good living. Some years it is not necessary to feed any other than the pasture but when the spring pasture is poor they are fed the first cutting alfalfa. If this is fairly clean it is fed in racks, but if foul, it is fed on the ground. The time of selling is governed to some extent by the market, but it usually comes about March 1st. As this is an alfalfa ranch and the hay sold to an alfalfa meal mill, these dates fit in very nice, as when haying season commences, the sheep are off of the place and when it is over the sheep come on and add several hundred dollars more to the annual income besides doing a good job of fertilizing.

While no buildings are used for the sheep, they being kept in the open pastures at all times, Mr. Morris considers that roofed feeding quarters and some shelter would be advisable.

We were told that although in the past sheep had only been used for a few months it was the intention to later keep a herd the year round, but in that event Shropshins instead of Merinoes will be used as they are a much better mutton sheep.

From this man's experience of nine years with sheep on an alfalfa ranch it would appear that many of our ranches in this State could be made to produce larger returns with the addition of sheep as a by-product.

FUNGUS POISONING.

To the Editor: Last year one of my mares, every evening after a full day's work harrowing, would stand for an hour or so with her head to the ground, shaking it frequently and not touching the feed till the spell was over. This year this mare does the same thing, and another one acts just about in similar fashion now. They do not seem to be any worse off, and in the morning they are, or seem to be, in good shape. The local veterinary has no idea what the matter might be. Please submit this to your specialist; perhaps he has some suggestions to make.—J. S., Kelseyville.

ANSWER BY DR. E. J. CREELY.

This is due to a mold or fungus in the earth or hay. I would let them have access to plenty of water during the day. In the morning feed give a handful of sodium hyposulphate.

San Francisco Veterinary College.

Alfalfa for Cattle and Sheep.

To the Editor: Would greatly appreciate any information which you may have in regard to the following questions:

How much alfalfa hay does it take to fatten a cow in ordinary flesh and good health? Do you believe it would pay to buy up cattle and fatten them when alfalfa hay is selling for $10 in stack? If so—where do you think is the most likely place to buy them and about what would be the cost of transportation, etc?

Also—have you any extra data upon the handling of mutton sheep in the alfalfa districts? Particularly pertaining to breed, value of wool, value of offspring, amount of feed consumed, etc.

Also—do you know of a section of this State where cow feed is scarce, and where one could probably buy good cows cheap or dispose of hay to good advantage? What is the most practical means of getting in touch with large hay consumers with a view of doing one's own commission work?—V. B., Stanilaus county.

We are not quite sure whether you are talking about beef cattle or dairy stock, and there is a little difference in the outlook and methods of each. It is our opinion that with alfalfa worth $10 a ton in the stack and feed scarce that there would be good money in picking up dairy cows and keeping them until next spring, or say, heifers. Also with beef stock, provided you fed from the stack, in other words, raised your own hay and fed without having to go to any extra trouble in handling the hay or paying somebody else for raising it. It depends very largely on how cheap you could get the stock.

It would hardly do to put in print that any certain sections were in such shape that feed was scarce and cattle very cheap on account of it. The northern coast counties are in fine shape for stock, the northern Sacramento in very good condition and things satisfactory south of the Tehachapi. Other districts here and there are in good condition through plenty of irrigation water. There has had to be quite a few head of cattle moved from leading stock sections not named but a big proportion of all that had to be moved are already shipped off to where feed is better.

You can get in touch with stockmen with cattle to sell by putting a liner in our classified columns or in the local papers circulating in the districts or by going in person where stock is likely to be sold or alfalfa in demand. You would have to do that anyway. Your best market for alfalfa hay outside of the cities is in the dairy districts, where irrigation supplies are short not where beef is produced. Your station agent will give you figures for stock of alfalfa hay freight charges.

The Utah Experiment Station found that it required 7182 pounds of alfalfa hay to make 705.6 pounds of beef, which was much less fodder than was required with other kinds of hay, so you can figure out just about what the gain or loss would be in buying and finishing stock on alfalfa hay. That would make about $36 for the cost of alfalfa and $49 for the value of the beef, if you could sell at 7 cents on the hoof. However, the better price for a steer in good condition would make a wider difference than this, perhaps a cent and a half on the whole weight of the steer.

There is a strong probability that it would pay you to feed some grain to the steers with alfalfa hay. A stockman in your district in the spring of 1912 was already to fatten his steers up with barley and alfalfa hay, but did not have to when the late rains came along, deciding he could do better than by using alfalfa alone. Alfalfa is also very high this year and barley nothing extraordinary.

To illustrate the value of some grain with alfalfa it can be said that the Kansas Experiment Station in a feeding test for beef-making found that the combination of corn and alfalfa hay gave a grain worth $109.74, against $57.16 for barley and alfalfa hay, the latter being a better combination than alfalfa hay alone. Barley (grain) can be substituted for corn with practically identical results, so possibly the above experience will be a guide.

The only place with which we are personally acquainted where sheep raising on alfalfa has been made a regular business, that is, outside of a purebred business, is on the ranch of Chas. T. Laugenour, near Woodland. He kept a cross of Shropshires and Merinos in order to get good wool and mutton both. Our judgment would be in favor of straight Shropshire, or some other mutton breed, at least we would not try to mix in wool breeds with that method of working, especially with the present outlook for wool.

These sheep were run on 100 acres without irrigation, half being in alfalfa, which provided the bulk of the feed, and half in wild grasses. An irrigation system was being provided at the time of our visit with the intention of making all in alfalfa, so that several times as many ewes could be run.

There were 600 kept under those conditions. It is said that one hearty feeding dairy cow will eat enough to keep ten ewes. The wool averaged about 9 pounds per year, and with straight Shrops of good breeding could run within a pound or so of that. The lambs actually raised ran close to 120%, and with good Shropshires it ought to be well above the crossbred average up to 150%. Thre was also a loss of about 10% a year in ewes, which had to be made up from the lambs. You can figure out the profits and losses yourself. One man with occasional help could look after the outfit, except at lambing time. With straight alfalfa the bloat and loss therefrom would be greater than the above, so possibly it would be well to raise some other crops as well. Mr. Laugenour apparently was prospering greatly in the venture and with the price outlook for meat, especially well raised mutton sheep, such a proposition should be a good one. Shropshire wool now is quoted, San Francisco prices, about 17 cents. You would get probably $3 or better for your lambs as a general average.

After writing the above we decided that it would be well to submit it to Prof. J. I. Thompson of the University Farm, at Davis, who returns the same with the statement that "you have answered these questions as definitely as it is possible to do," so feel that they are fairly dependable. Prof. Thompson also adds, "It is too risky to attempt to pasture sheep on alfalfa regularly. The loss by bloat would be enormous." In short, the sheep farmer had better raise other crops with alfalfa, which is not a bad plan no matter what stock is kept.

NEVADA FIELD NOTES.

As soon as we got to Reno, Nevada, we started out to find some of our old subscribers who always prove useful in giving information as they are interested in seeing the RURAL PRESS, the best paper on the coast. We found the Geo. Peckham place first thing and as an example of what can be done here in this part of Nevada it is one of the best of all. The Peckham's, father and sons, are most delightful people to meet and gave us generously of their time showing us about the ranch and telling what had been done. The place had been sagebrush. A part was reclaimed and irrigation brought on.

From overflow, from irrigation carried on above, great tracts of land had been turned into tule swamps and would produce nothing. One of the boys started to digging ditches to drain this land. Today, where it was unsafe to turn horses or cattle they are producing 4 to 5 tons of good hay per acre.

Some fields are sown to alfalfa alsike and timothy. Mr. Peckham said he liked this combination better for horses than straight alfalfa. They are certainly raising some fine horses.

The Peckhams are big potato raisers. This year they have some 37 acres, and as we went over the field we can testify that a finer stand could not be desired. It was in 1911 that a periodical published a picture of one of their potato fields and made the statement that they got 15 tons to the acre. The truth was that they got 20 tons to the acre but the editor must have thought it too big to be true.

There is lying to the north and east of this ranch some 10,000 acres of land as rich as this that need only the same kind of treatment, namely, drainage, to make them just as productive.

But this cannot be done so easily as on the Peckham farm, and it would possibly need Government aid as the Truckee river interferes, but all were reclaimed the Fallon Project would immensely benefited.

We were led to believe that the PACIFIC RURAL PRESS is first to call attention to this important fact. The project is a big one and the ranchers cannot get together to work it out alone. Yet the expense would be inconsequential compared to the advantages.

Before leaving the Peckham ranch our attention was called to the irrigation system. Where water is taken from the main ditches, concrete boxes have been put in, and are being extended over the farm. Time is saved and the expense more than overcome by preventing cutting by the water.

W. C. Short, with 460 acres, largely in alsike clover, timothy and red top, but to be turned more into alfalfa, is another of the old time RURAL PRESS friends visited. Mr. Short is a breeder of Shorthorns. His ranch was settled in 1857 and he has been here since 1898. His herd of registered cattle consisting at present of 135 head has at its head Quinto Duke 25th 288,515, and what he considers a finer animal, Roselawn King 51st 252,233.

Jessie 10,740 sired by King Spicer 28th, is a splendid specimen and Linda Bell 4th calved July 24, 1894, is milking up with the best of them, showing the stamina of the stock Mr. Short is producing. On Mr. Short's place are natural springs whose waters come to the surface at 62°F. Mr. Short is producing a fine strain of Percheron horses—his three year olds never bringing less than $250.

Near Mr. Shorts place is the C. A. Ramelli ranch of 2000 acres devoted to Durham dairy stock. Here is produced the finest full cream cheese in the State, about one and one-half tons per month being produced.

Mr. Ramelli expects to substitute Holsteins for the Durhams eventually. The cheese cellar cannot be improved upon. It is built into the face of a hill near the house and is modern and sanitary.

A short visit to the Rafertto ranch showed us these young men could produce 20 tons of onions to the acre. Though they said their land would not produce over 10 to 12 tons of potatoes.

This land here is wonderful and needs only the hustler to bring out all its possibilities.

SIERRA VALLEY NOTES.

While the altitude of Sierra and Mohawk valleys limits somewhat the diversified farming found in other places, and hay and stock are the principal industries, yet we found some attention being given to fruit and vegetables. Apples seem to do very well and are of fine quality.

One the Voogt place a very large apple orchard, recently set out, is looking fine. This farm will be irrigated principally by wells. Two wells on this farm are flowing but are not strong enough and so pumps will be put in.

On the Ramelli ranch we found a dairy where butter and cheese are produced and beef cattle are made ready for market on the hay which we were told put the cattle into as good shape for market as if they were fed grain. No grain is used.

The only ranch where alfalfa is grown to any large extent is on the Lewis Bros. place near Loyalton. They have 800 acres in alfalfa now, which is grown without irrigation. As far as I was able to learn though there is not a great deal of land in the valley that would grow alfalfa successfully. The Lewis Bros. have a fine large up-to-date barn and at the time of our visit were remodeling their dairy.

Mr. Lewis believes in the Holsteins as a dairy breed and recently paid $400 for a fine yearling bull of that breed.—J. D. Tribby.

LOOKS LIKE COW POX.

What is the cause and also the cure for small boils on cows udders in the hair next to the teat? —J. M. D., Santa Rosa.

ANSWER BY DR. E. J. CREELY.

Give a good dose of Glauber salts and Epsom salts mixed, 8 ounces of each, and apply the following: Zinc ointment, 4 ounces; iodoform, ½ ounce; lanoline, 2 ounces. Mix and apply once daily.

San Francisco Veterinary College.

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RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

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SHEEP.

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NEW THOUGHTS FOR DAIRY BUILDINGS

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The sanitary conditions of dairy barns is a subject which is being given more consideration in this State as the business gets onto a more substantial footing. In this respect, a good deal of improvement is being made on A. B. Humphrey's ranch at Mayhews, Sacramento County.

In this case it was necessary to add to and make over an old dairy barn and some of the features would seem to be practical for many other dairymen who contemplate remodeling old buildings.

As a concrete silo was erected several years ago adjoining the old barn that end was selected for the new addition. This was made into a shed roof about 12 feet high at the low side and running into the barn at the high side. This addition was wide enough to accommodate two rows of stanchions and left the silo enclosed at one end.

Steel stanchions were installed and concrete floors, mangers and gutters put in, also a manure carrier for the manure and to carry cans of milk. The gutters run into a cement lined open basin or hole just outside of the building. From this basin there are two drains, one leading to a cement lined cistern near the barn and the other one leading to an open ditch where the liquid is carried into the irrigation ditches.

By having this arrangement together with a gate at each opening the liquid manure can be drained into the cistern and the water used for flushing purposes is drained into the irrigating ditches.

The ceiling and walls are exceptionally good, being covered with galvanized iron. This is nailed on in strips and with the cement floors and steel stanchions makes a barn which can be thoroughly hosed off all over or scrubbed if thought necessary.

If there is such a thing as being able to keep a dairy barn free from dirt it should be possible with this one.

The extra cost of the galvanized iron was a little more than other coverings would have been due to more labor in putting it on but once in place it should last a lifetime.

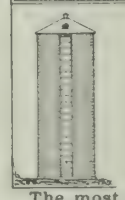
Besides this it makes the milking barn just about fire-proof and will save a great deal of work in the cleaning of the barn.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three year old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale Jas. W. McCord, Hanford.

THE PACIFIC SILO



a Concrete Silo with all modern improvements. As permanent as the ground upon which it stands. Especially constructed to meet the requirements of the Pacific Coast States.
CONTINUOUS OPEN DOOR FRONT
Perfect System of Ventilation and Drainage.
The most economical silo to build and to use. Write for "Catalog C" to
DELTA CONSTRUCTION CO.,
P. O. Box 908. Sacramento, Cal.

Cutter's Anthrax and Blackleg Vaccines

are given the preference by 80 per cent of California stockmen because they give better results, than others do.

Write for Prices, Testimonials and our New Booklet on Anthrax and Blackleg.

THE CUTTER LABORATORY
P. O. Box 257, BERKELEY, CAL.

You need a new DE LAVAL Separator NOW

1st If you are still using some gravity or setting process of creaming—

Because your waste is greatest and quality of product poorest in mid-summer, when the milk supply is greatest.

Because time is of greatest value on the farm at this season and the time and labor saving of the good separator counts for most.

Because the skim-milk is poorest without a separator in hot weather and often more harmful than heplful to calves and young stock.

Because the work of an improved De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

2nd If you have a very old De Laval or an inferior separator of any kind—

Because the losses of the poor separator from incomplete skimming and the tainted product of the difficult to clean and unsanitary separator mean most when the bulk of milk is greatest.

Because of the great economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

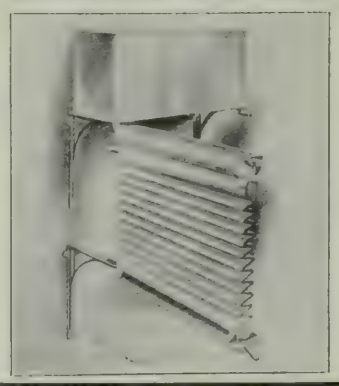
Because an improved De Laval separator is so much simpler and more easily handled and cared for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

Because the De Laval separator of today is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot mid-summer months.

These are all facts capable of prompt and easy demonstration, whether you have a poor separator or none at all. The new De Laval catalog, to be had for the asking, helps to make them plain. Every De Laval local agent stands eager to do so with a machine itself, with no obligation on your part to buy unless he does and that to your own satisfaction.

WHY DELAY? Why put off so important a step as the use of the best cream separator, which you need more RIGHT NOW than at any other time?

DE LAVAL DAIRY SUPPLY COMPANY
165 Broadway NEW YORK — 101 Drumm Street SAN FRANCISCO — 1016 Western Avenue SEATTLE



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A PERFECTION COOLER
will prevent your cream from souring and improve its flavor. Made of copper, heavily tinned, and will not rust. Has more cooling surface than any other cooler of same dimensions. No ice necessary. Several sizes, also other styles. Furnished complete as shown.
If you want the best, buy a PERFECTION
Pacific Dairy Machinery Co.
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Swineland
Tamworth
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2 Gold Medals
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We are booking orders for Spring pigs for May and June delivery.
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Soy Bean MEAL
PROTEIN EXCEEDING 44%
For Cattle, Poultry and all Farm Animals
Will double your milk, cream and egg supply.
Write for booklet "SYSTEMATIC FEEDING AND THE VALUE OF SOY BEAN MEAL."
NORTH AMERICAN MERCANTILE CO.
318-320 Front St., San Francisco

HOLSTEIN HEIFERS
3 two-year-old bred for first calf.
PENNANT DAIRY.
E. J. WELDON,
Box 962, Sacramento, Cal.

LIVE STOCK AND DAIRY NOTES.

Equipments recently added to the Palo Alto Creamery make it one of the most modern in the State.

The wool clip of Lake county, Oregon, is stated to be 1,250,000 pounds this season. Buyers are in that section paying from 13 to 14 cents. At the Shaniko, Ore., wool sale, held recently, 1,000,000 pounds were sold at from 12 to 15⅜ cents.

Lars Fredricksen of the United Agricultural Societies of Jutland, Denmark, recently visited the A. W. Morris & Sons ranch at Woodland, and says that the herd of Holsteins kept there is the finest he has seen in his travels over the United States.

At the auction sale of dairy cows held by J. A. Scott at Lemoore, Kings county, recently, an average of $71 per head was secured for 30 head.

Idaho stockmen bought 17 car loads of mixed cattle in Tulare county last week to ship to their ranges in Idaho, where pasture is abundant.

A small modern creamery has been established at the United States experiment station in Hawaii. About 1,000 pounds of butter per month are being made from milk received from neighboring dairymen and sold in Hilo at an average of 55 cents per pound. The amount manufactured is insufficient to supply the demand, and a co-operative organization is being formed among the dairymen to build a larger creamery and take over the business.

At the Portland Union Stock Yards last week the market ruled steady to strong. Best steers sold for $8.75 and the balance from $7.75 to $8.25. Calves brought $9, bulls $6.50, heifers $8, cows $7 to $8. Hogs were in demand and higher prices resulted. They brought $8.85 to $9. Lambs sold for $6 to $6.75.

Porterville has shipped nearly $800,000 worth of stock from that section this season. Last week 33 cars of beef cattle and seven cars of sheep were shipped to Oregon. Prices have been good, in some instances good steers have brought $85 to $100 per head.

C. E. Williams has recently been appointed manager of the Hardwick creamery. This institution paid 31 cents for butter fat delivered during the past month.

HOLSTEIN-FRIESIANS

Riverside Sadie de Kol Burke
Milk in one year, 28,826.4 pounds. Only cow averaging 100 pounds a day for 6 months.

We Have For Sale After June 15th

20 Registered Cows
15 Registered Heifers
80 Grade Heifers

Aralia de Kol (12½ Years)
Milk in one year, 28,090 pounds. First cow to exceed 28,000 pounds.

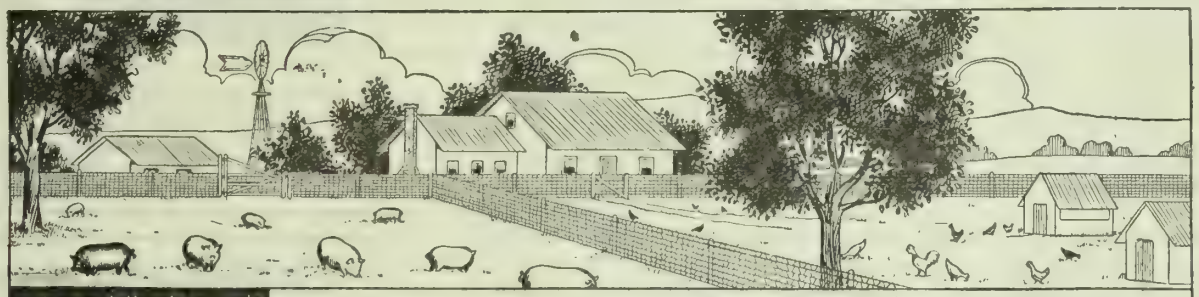
All registered cows and heifers are bred to our herd bulls, which combine the best blood of the Holstein breed. Each of these bulls have been winners in the show ring, and their calves are the most promising that we have ever seen. This is the only way that you can get heifers from these sires, as they are not for sale at any price, all being kept until they have been officially tested. In many instances the calves dropped from this service will be worth the purchase price of the cow, and we will pay half the purchase price for each heifer calf. Buy these and start right.

The eighty grade Holstein heifers are by registered sires, and have been selected from choice cows for a high-grade dairy herd, and on account of the dry season are offered for sale. Fifty of these, from 18 months to 2 years, are bred to a registered bull, and the balance are yearlings and not bred. This is a rare opportunity to get a high-class dairy at a reasonable price.

Also have for sale fifty young registered bulls from 3 to 14 months, many of which are from A. R. O. dams with exceptionally good records.

Come and look them over or write for further information and price.

A. W. MORRIS & SONS, Woodland, Cal.



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A **WARNER FENCE** does not sag but stretches evenly. Can be used on uneven ground, gulleys and ravines as well as on level ground.

Very Economical **WARNER FENCES** are money savers because unnecessary expense has been eliminated in their manufacture. They also require fewer posts than any other.

Fully Guaranteed We guarantee **WARNER FENCES** to be exactly as represented. So confident are we that the **WARNER** is the **BEST** fence on the market that we will let you test it on thirty days' trial. If it does not come up to your every expectation return it and we will refund your money. Write for catalogue now. Address

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The soil, water, climate and transportation are here now, all they lack is men to put them to work. Are you the man? If so, here is the chance you have longed for. We give you ten years to pay for the land.

The finest alfalfa land in California.

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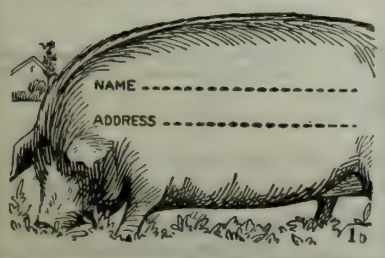

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Holtville, Cal., May 22, 1913.
Chas. F. Daniells & Son.

Gentlemen: We have used the Hinman Milking Machine for ten months with the best of success. Our cows are gaining in quantity of milk as well as butter-fat. We will never do any more hand milking. We find the machine excellent for milking heifers. The 1913 valve chamber is an improvement which adds greatly to the efficiency of the machine. I know the Hinman will not injure the cow in any form, and saves labor and expense.

Yours truly.
J. R. McCORMACK.

C. F. DANIELLS & SON,
Agts. California and Oregon,
Modesto, Cal.

TEN CENTS EACH FOR NAMES OF FARMERS.

I will pay ten cents each for names of farmers who would be interested in our two swine papers, The Berkshire World and The Swine World. Send twenty cents and the names and addresses of 13 farmers at once. For this service you will receive the two papers for one year; regular price, $1.50.

JOHN Y. BEATY,
Western Representative,
1122 Sonoma Ave., Santa Rosa, Cal.

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1. A silo is the cheapest form of storage.
2. Nothing excels the feeding of ensilage.
3. A silo is the best kind of insurance against burnt-out pastures.
4. Most any green crop can be siloed, such as alfalfa, corn, oats, barley, cow peas or beets.
5. IDEAL GREEN FEED SILOS are constructed to meet all climatic conditions of the Pacific Coast States.
6. Buy an IDEAL GREEN FEED SILO now and double your profits.

WRITE FOR FULL INFORMATION.

Ensilage Cutters and Gasoline Engines

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Results of Better Dairy Practices.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

While a great many of our California dairymen are yearly going deeper into the more scientific points and the reasons for same, very few are found who have given the whole subject, that is, from soil to creamery check more study and attention than J. W. Scott of Ceres, Stanislaus County, and that it has paid him can be seen from the following results.

Mr. Scott bought his present ranch eight years ago which until that time, had been continuously cropped to grain.

Before this time he had been in the mining and stock business so that the results he has obtained have been through deep study both as to his own conditions and what he was able to learn through agricultural literature.

After purchasing the 85 acres, his present holdings, he went to experimenting as to which crop was the most profitable in his section. While this is unnecessary for one at the present time, when he started the place, there was no precedent to work by as far as deversified farming was concerned.

At first, ten acres of potatoes were planted which were expected to yield a good return judging from the size and quality of the crop, but like many others he found that to market his crop was the most serious problem, as after sending his crop to San Francisco commission men he finished the season $300 short of his original capital. The one experience settled the potato idea, but other farm crops were experimented with along the same lines for two years with no better results financially.

As during all of this time a complete set of books had been kept and as they showed that by continuing along the same lines his capital would soon be exhausted, it was decided to start darying as a last resort. However, before making this change, he looked into the possibilities of alfalfa, and after satisfying himself that it would produce a good quality and large tonnage if properly handled, he purchased 27 head of grade cows, mostly Jerseys. Although these cows were only considered grades, many were in reality pure breds whose registration papers had been dropped. So in this way he was able to start with good producers.

Instead of putting his own capital into this stock, he had the creamery buy the stock and take their payments out of the cream checks. In this way he was able to use his ready cash for other development.

The first year only alfalfa hay was fed, the same as others nearby were doing, but he decided after experimenting that corn could be given successfully, so a resaw and studded silo was erected and enough corn planted to fill it.

In this way he materially increased the efficiency of his alfalfa and was also able to raise a good crop of grain hay before his corn was planted.

The question as to whether it pays to raise corn instead of alfalfa which bothers so many, seems to have been answered here for from 10 acres enough corn is grown to fill a 106-ton silo and also produced enough first-class oat hay to feed the seven or eight head of horses on the place for the entire year.

Not only from a tonnage standpoint does this pay, but the ground is also greatly benefited by the rotation of crops.

In this man's experience one finds a condition not often encountered where silage is used, for after keeping accurate data he has been unable to see when ensilage greatly affects the flow of milk for any definite period, but considers that the ultimate results are much better by its use as the stock is kept in much better condition and are able to hold up the yearly milk supply much better.

To make the above statement without going more into details would perhaps be misleading, for while Mr. Scott considers a silo very necessary he believes a great deal is annually lost through improperly curing the alfalfa. His method is to cut the hay when it is in the bud and to rake and haul off soon afterward before it has a chance to dry out and become brittle as often occurs. By harvesting in this way it has been found that when fed, being of better quality, very little is wasted by the stock and for this reason it goes farther and the cows give more milk.

It might also be said that but eight pounds of alfalfa seed are sown to the acre and the writer has seldom seen a nicer stand.

Having a good foundation herd in the first place and through breeding up with purebred bulls, it has been found that the heifers are much better producers than their dams.

Instead of guessing at these facts, however, an accurate account has been kept of each animal by being a member of the Stanislaus Cow Testing Association and Mr. Scott states that he considers association cow testing the only accurate and economical method to cull by. A glance at his testing book was very interesting, as it showed some remarkable averages and shows what a little time and study along more progressive lines may accomplish.

Last year 27 cows were entered in the association, 21 of them having finished their yearly records at the time of our visit. The average for the 21 cows was 272 pounds of fat, and we were told that this year they would be culled down to only 300-pound cows or better, surely some difference from a good many herds in the State where a cow's a cow, no matter what she produces. One cow, 16 years old, gave 359.9 pounds of fat for the year, and in 39 days gave 69.9 pounds of fat. She is called Milk Fever, having had milk fever three years out of five, which makes her record a little more remarkable. We were shown the results of other mature cows which were not so good, but when we found these cows' heifers a decided improvement was apparent.

One of these heifers with her first calf had given 954 pounds of milk with a test of 5.8 the first month fresh, 910 pounds milk with a test of 5.4 the second month, 846 pounds milk with a test of 5.2 and the fourth month gave 771 pounds of milk with a test of 5.7, making 183.7 pounds of fat in four months.

The mother of this heifers although a good producer was nothing exceptional but it shows the improvement made by the use of good bulls.

Many others in the book showed remarkable productions but this would seem to be enough to illustrate that better methods are not only essential for the breeder who is going in for records but also for the man who desires to get the most from his investment. Many other features on this ranch deserve mention of which we may speak of at some future time.

BERKSHIRES

Our herd is now one of the best in the State, being rich in **Silvertip, Black Robinhood, Longfellow, Empress and Masterpiece Strains.**

Prices reasonable, satisfaction sure. Correspondence solicited from interested parties.

OAK GROVE DAIRY FARM.
Woodland, Cal.

Hillcrest Stock Farm

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"Hillcrest Lad"—First Prize Ram at State Fair, 1911.

Breeder of

Short-Horn Cattle, Shropshire and Merino Sheep

Offers for Season of 1913 an exceptionally fine lot of Pure-bred and Registered Shropshire and Merino Rams, yearlings and two-year-olds.

1st Prize Ram Lamb, Omaha, 1911

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Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.

CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.

OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.

INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS.,
San Ramon, Contra Costa County.

California Live Stock Breeders

THE FIRST ANNUAL CONSIGNMENT SALE

will be held on State Fair Grounds during the State Fair this year.

HIGH PRICES WILL OBTAIN

It is estimated that 5,000 pass through the Fair Grounds daily; 75% of these are interested in live stock and most of them are active buyers. We are booking orders now for consignments of stock to be placed in the sale.

DAIRY and BEEF CATTLE—HOGS—HORSES

We want them all. Purebreds will be sold on Fair Grounds—Grades outside

Write us for particulars. Address all communications to

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LARGE TYPE

YOUNG STOCK FOR SALE. BOTH SEXES.

THE BROWNING STOCK FARM.
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ASK YOUR DEALER FOR
EL DORADO COCOANUT OIL CAKE

for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address

EL DORADO OIL WORKS,
149 CALIFORNIA STREET, SAN FRANCISCO.

Among the Breeders.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Perhaps no herds of Berkshire hogs or Shorthorn cattle are better known than the Murphy herds near Perkins, Sacramento County. This is due to good quality and persistent advertising and showing at the State Fairs.

P. H. Murphy, father of H. L. Murphy and G. A. Murphy, was one of the first breeders in the State of registered Shorthorns and purebred Poland China swine, having shown stock and fruits at the California State Fair for forty-nine successive years. His sons favored Berkshire hogs, so went into that line and as a result have built up exceptionally fine herds.

Since his father's death, H. L. Murphy has taken over the management of the home place and states that he expects to greatly increase the Shorthorn herd and expects to buy a new bull this fall after which time a dairy will be started, this stock being of milking strain Shorthorns.

It is his belief that the future of the dual purpose cow is very favorable as with the larger ranches being sub-divided and the price of meat soaring, the carcass of an animal will very likely influence the demand for both a meat and butter cow.

The hogs on this ranch are so well known that it is not necessary to mention them other than that both of the Berkshire herds will be shown at the State Fair this year.

As has been stated before in these columns, California's climate and alfalfa possibilities are becoming known among breeders throughout the east with the result that every year several breeders are added to the State's already large list.

N. E. Mulleck, of Willows, Glenn County, although a breeder of Holsteins in Wisconsin for about 20 years is a comparatively new man in this State. While there are 50 acres of alfalfa land on his ranch it has not all been seeded as yet, but he states that alfalfa is greatly superior to anything he has ever fed in the east, and claims that several of his cows have averaged 2.8 pounds of butter on a straight alfalfa ration. While alfalfa has, no doubt, greatly aided such a record the blood lines carried in this herd in which there are 20 head at present, is no doubt responsible for part of it, as the herd is strong in De Kol and King Segis bloods. The herd bull is a 3-year-old called Segis Oak Homestead Fobes, sired by Judge Beets Segis and is a good type of dairy bull.

Mr. Mulleck states that while he has found a market for his offspring, he finds the average dairyman is not as keen for purebred sires here as in the east, but believes that after a few years experience with scrub stock the purebreds will come into their own.

Readers will notice in another column the change of ownership of the Pennant Dairy herd of Holsteins, formerly owned by Heenan and Weldon but now owned entirely by Dr. E. J. Weldon.

Dr. Weldon states that he has sold the bulls advertised and now announces some bred heifers for sale. Details of this ranch and methods used were given in the Rural Press a year ago, so it will be sufficient to state at this time that the stock imported from the east last fall are all getting in much better condition since having became acclimated.

Among those deserving most attention on the ranch is the bull Star Youth Korndyke Wayne, sired by Korndyke Wayne Paul De Kol and out of Lettie B, who has a record of 24.58 pounds of butter. As a 3-year-old this bull is a fine individual and has sired many calves now on the ranch which for grades are hard to beat.

Some of this stock will be shown at the State Fair, some heifers being expected to do exceptionally well.

Among sales recently made from this herd are two 2-year-old registered heifers purchased by Wm. M. Little of Snelling, Merced County, also 50 head of grade bull calves which will be shipped to Mexico and used on range cattle to increase the size of animals and flow of milk, which the native cattle of that country are so short on.

STATE FAIR DOINGS.

Parties interested in the future of the State Fair at Sacramento will be disappointed in learning that nearly all of the extra money appropriated by the last legislature were pocket vetoed by Governor Johnson. Among the appropriations vetoed were $60,000 for additions to the Agricultural building, $40,000 for the Women's building, $50,000 for additional grounds, $15,000 for additional cattle barns, and $10,000 for up-keep of grounds.

It would seem that all of these measures were necessary as the Fair is yearly becoming a larger factor from an educational standpoint and money spent to improve the grounds and buildings is badly needed at this time.

This year's premium lists will not be out before July 1, after which time they may be obtained from Secretary McCarthy at Sacramento.

We were informed during the past week that some changes would be made in the swine division, that the Live Stock Board would be allowed to spend $1,000 instead of $200 for dairy products and also some changes will be made in the pet poultry and riding horse divisions.

Beef stock will very likely be in the same classes as last year and perhaps dairy classes also.

We will give more particulars as soon as they are given out by the board and in the meantime suggest that it's about time for one to be getting that stock ready for the big show.

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A-1 Grade Second-Hand
PIPE
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SCREW CASING
Best Quality. Fully Guaranteed. Get our prices before buying. They will interest you.
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Formerly conducting business under name of Alexander Pipe Co.

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THE HAY STACKER THAT SAVES TIME, WORK AND MONEY

This derrick will handle hay, loose or baled, in the easiest, quickest and most economical manner known. It is always ready, is portable and can be moved from place to place as easily as a farm wagon. With it three men can do the same amount of work as nine men by hand. Has great lifting capacity and is unequalled for hoisting machinery, timbers, or heavy loads of any kind.

WRITE US TODAY and we will send you descriptive and illustrated literature. The Schmeiser Portable Automatic Derrick is not an experiment. It is the result of 25 years of actual experience gained in farming. It is being used with great success all over the Pacific Coast. Write us NOW for full details explaining just what it can do and how it can save you time, work and money. Address

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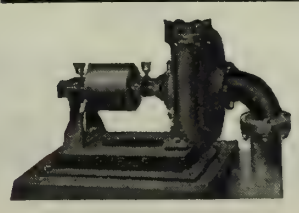
OAKLAND: Thirteenth Street and Broadway; Phone Oakland 162.
Sixteenth Street Station; Phone Lakeside 1420.
First St. Station; Phone Oakland 7960.



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Mention Rural Press.

DAIRY HERD FOR VENTURA COUNTY.

A. L. Gordon, rancher residing at Oxnard, has purchased the Delaney place of 540 acres at Pozo. About 300 acres is farming land, 100 acres being choice bottom, 25 acres already in alfalfa. A lake of 10 or 12 acres furnishes storage for an ample supply of irrigation water for all the bottom land. The remainder of the place is nice rolling pasture with plenty of oaks for shade. Mr. Gordon will put the entire 100 acres of bottom in alfalfa, a simple oil engine furnishing power for irrigation. Mr. Gordon has purchased the dairy herd of M. L. Silva of Arroya Grande, consisting of 34 cows, mostly grade Holsteins. This is recognized as one of the best producing herds in this county. The cows are all young, ranging from 2 to 4 years old, many of them being very near, if not full blood. A first-class bull will be used with this herd and something may be heard of it in the future.

OFFICERS OF THE STOCK ASSOCIATION.

At the meeting of the California Livestock Breeders Association, held in San Francisco, June 28, Judge Peter J. Shields of Sacramento, was elected president, E. W. Howard, San Francisco, first vice-president, and A. W. Morris, Woodland, second vice-president. The appointment of an executive committee by the president and the choice of a secretary for the association will follow.

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A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

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FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

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114 acres, 2 miles from Suisun, Solano county, 49 miles from San Francisco. Both rail and water transportation. Well improved, beautiful trees. $15,000, including all cows, horses, hogs, chickens, and hay in barn. 70 acres level bottom land, balance rolling. PAUL GOODLOE, 519 California St., San Francisco.

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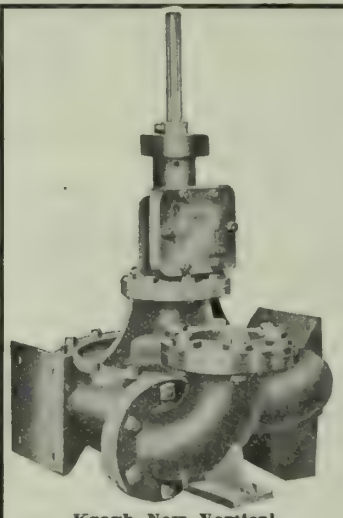

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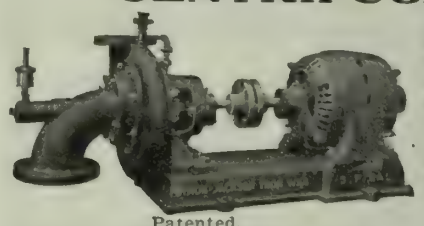

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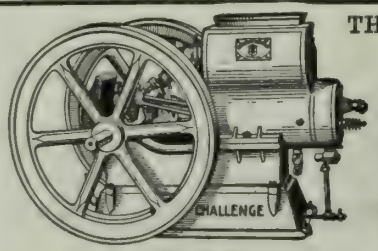

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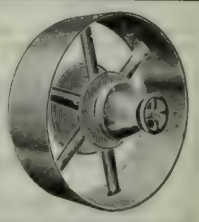

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LISLE M'F'G. CO., Box 412 SAN FRANCISCO, CAL.

Methods of Preserving Eggs.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

While the cold storage egg is for the city dweller, there are times when the farmer who only keeps a few hens for his family needs is obliged to buy the storage egg as his hens are molting.

By having a few chicks hatched at different seasons this could be avoided, but as a rule it is not done and the farmer has to buy eggs. As a matter of fact a farmer ought not to buy anything he can produce because there are methods of preserving everything in times of abundance.

THE WATER GLASS METHOD.—This is the most popular, and if you get a good article it is about as easy to do and all things considered as cheap and practical as any method. Sodium Silicate (water glass syrup), is a thick syrup liquid that differs somewhat in color and consistency. The best is as near white as possible and the darker looking it is the poorer are its keeping qualities.

I think druggists claim the dark variety comes from Germany, if it does it is just as well to let them keep it at home, for I lost a lot of eggs with it one year. Along in the winter they developed mold spots on them and were not fit to eat; so when buying be sure and get the white water glass.

As the strength varies some it is always better to be on the safe side and make it pretty strong. Eight quarts of water to one of water glass is about right. Boil the water then stir in the water glass and set aside to cool. The eggs are better set large end up in layers but it takes more room than when packed sidewise, but as the yolk settles to one side, it pays to pack endwise.

After packing the eggs pour the mixture over them cold and set away in as cool a place as possible. Earthenware crocks or wooden buckets, barrels, etc., are the best containers, but I have packed in five gallon oil cans and never saw anything wrong. The fact that water glass is sold in tin cans, gave me the idea that it was all right to pack eggs in the same material and I used them whenever I was short on crocks.

The eggs must be well covered with the solution and weighted down with a board or some simple device. If intended to be boiled pierce the large end with a fine needle. For frying, baking or any form of cooking, these eggs are just as good as the fresh article, but, it must be understood that the eggs must have been gathered and packed fresh.

The best keeping eggs are those where the males are having a vacation and the eggs themselves gathered twice a day out of strictly clean nests. Such eggs will keep under ordinary care better than eggs given the greatest care that are not gathered right.

THE LIME WATER BRINE METHOD.—This once was the method used by bakers and restaurants before the storage egg became so popular. Quick lime 16 ounces, table salt 8 ounces, and boiling water one gallon. More can be made in same proportions.

To make, pour the boiling water over the lime, stirring well to keep from burning, add the salt, and stir until it quits boiling. Allow the mixture to settle, which may take a day or two, then draw off the clear solution and pour over the eggs packed in earthenware crocks. The eggs must be well covered and weighted down or the top layer will not be good.

In addition to these methods, eggs for family use may be packed in salt and bran equal parts, the eggs being so packed that no two touch. After one layer is complete put one inch of the bran and salt which must be fine, over the surface and commence another layer. No expense attaches to this method as most families have on hand a clean grocery box or two and some salt and bran. The point to remember is to pack just far enough apart so that the mixture touches the eggs all around, while if the eggs are allowed to touch there would be no preservitive between.

A little judgment must be used in all the methods for sometimes a very little thing causes a failure. And it surely is handy to have the eggs to fall back on at a time when the price is so good that we hate to use the fresh laid article to make a cake that calls for half a dozen.

Any one with a cool, dry cellar can pack away all the eggs needed for family use in this simple way. Years ago I packed eggs in Dakota in May and June and had eggs all winter while those farmers that did not go to the trouble to pack eggs went without.

I remember being invited to a party once and the farmer's wife said she was going to have that party if she did have to make her cake without eggs. I told her I had eggs and she said, "Why, there is not an egg to be gotten for love or money."

"Well, send your husband over and I will give him some just for luck," and maybe you won't believe it, but I was the most pestered woman of the party. Everybody wanted to know how it was possible to have eggs as fresh as those in winter. Of course, I explained as well as possible and several women said they had packed eggs away in that way but they never kept well. Now I account for that in the only way it can be accounted for, they failed either to put strictly fresh eggs away; or they allowed the eggs to touch each other, or possibly the bran was musty to commence with, so you see if care is not taken in all things there is apt to be a failure and then we blame the method instead of ourselves.

Poultry Questions.

As we have two inquiries our space must be given to them and though the first one was answered by mail, I think it is best to let all our readers have the benefit of it.

To the Editor: I have a flock of birds, about 400 white leghorn pullets three months old. Some of them get stiff in the legs as if they were paralyzed, and in a day or two they can hardly get around at all. Some of a smaller bunch get a little droopy but still eat and grow weaker every day until I finally kill and bury them. I have these birds on open range and they have a nice field of alfalfa to run in, a good, clean sleeping place and are free from lice. I am feeding mostly wheat, corn and a dry mash two or three times a week, plenty of grain and clean, fresh water. What would you suggest as a tonic for the whole flock? Any other information you can give me on the matter will be greatly appreciated.—E. V. B. MADESON.

Answer: It is very evident that these chickens have good care and the only way I can account for the trouble is that they have either picked up some poisonous animal food somewhere on the range. It might be gophers or rabbits that have been killed and left to decay. All forms of poisoning affect poultry in mu[illegible] the same way, too much salt, or salt me[illegible] will paralyze them, but decayed animal food such as gophers are quicker to act. Gophers work in alfalfa, so I would suggest that you make a thorough search of the patch and it would be as well if you could shut the chickens up in yards for awhile. By yarding them you will be able to tell whether the trouble is on the range or closer. By this I mean that sometimes we get grain that is affected with Ergot and that acts in very much the same way because it is a poison.

The following is the very best tonic I know of for general purposes:

Tincture of Red Cinchona, 1 fluid ounce.
Tincture of Chloride of Iron, 1 fluid drachm.
Tincture of Nux Vomica, 4 fluid drachms.
Glycerine, 2 ounces.
Water, 2 ounces.

Mix and give one teaspoonful to a quart of water, allowing no other drink.

Can you tell me the cause of chicks dying in the shell in the incubator after the eggs have pipped?—E. P. W.

There are more causes for that trouble than I can enumerate. When the operator has bought the eggs, he lays it to poor vitality, when he runs the hens himself that lay the eggs he blames the incubator and neither is wholly to blame. At the end of a season the hens are apt to be some depleted and if conditions are not just right the chick will fail to get out after it has pipped because the work of breaking the shell requires quite a little energy, then if the shell is too hard through lack of moisture the chick has to expend all its vitality on that and it gives up at the last minute. I will give something more on this subject later, as the season is about over anyway.

POULTRY.

S. C. WHITE LEGHORNS—Heavy layers, California's greatest prize winning strain. Eggs, chicks, stock. Send for list. M. Dutterbernd, Petaluma.

BARRED PLYMOUTH ROCKS, White Minorcas, White Holland turkeys. Stock and eggs only. L. N. Cobbledick, Oakland.

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ORPINGTONS, BUFF AND WHITE—Summer sale of stock. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

FOR SELECTED EGGS AND CHICKS from S. C. White Leghorns, see Hopland Stock Farm advertisement.

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WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B. Morris, Lodi, Cal.

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and begin to condition your hens for a big production when prices are high in the fall. Start in time to get the egg machinery working right when you make the greatest demand on it.
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EGGS $6 per hundred in lots of less than 1000 eggs. Orders in excess of this, 10c per dozen above highest market price one week before shipment. 75% fertility guaranteed.
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The Home Circle.

THE NEW COOK

[By John J. Armstrong.]

"I do hate burnt bacon!" grumbled the gov'nor. "Breakfast completely spoiled. Can't you get another cook, Selina?"

My dear aunt cocked her sharp nose, and her thin face flushed.

Though a good soul, and devoted to myself, on the subject of her management of the house she is decidedly touchy.

"I cooked that bacon myself, Josiah," she sniffed.

"It's evident," returned the pater. "Six different cooks we've had this year. Not a blessed one will stop. You're a dear creature, my sister, but I'm hanged if you can manage servants."

The expression of mingled pain and anger on her face was provocative of mirth, but, controlling myself, I gave her a sympathetic smile.

"If you think you can manage better than I, do so," she protested hotly.

"Tut! tut!" said the guv'nor, puffing out his red cheeks. "You're old enough to be sensible."

"You'll engage the next yourself," she said, bouncing out of the room.

"Very touchy creature, my boy," said the guv'nor, smiling curtly. "Soured for the lack of the suitable man. Just leave an advertisement at The News office when you go in. We must have a capable cook for the 10th. I've asked one or two to dine. Judkins will bring his girl. It is my hope, and his too, I may say, that you two should make a match of it."

"I'm very sorry, dad," I said, "but——"

"But! but!" he interrupted. "I thought I'd finally dispose of all that nonsense. My views were definitely stated. You're your own master, but if you have anything further to do with that Smythe girl, I'll—I'll beggar you. The scurrilous hound!"

"You're unjust," I protested. "The girl cannot be held responsible for her father's transgressions. He beat you at the poll, and you're sore about it. Perhaps he and his supporters did malign you——"

"Maling!" burst out the guv'nor, hotly. "Lies, sir, outrageous, abomnible lies."

"Well, you know Smythe publicly disclaimed all responsibility for the calumny and expressed regret," I said. "I knew and admired Margaret long before the beastly election, and it isn't like you, pater, not to give any one a chance. I ask you to let me bring her to you. You shall judge as to her disposition, her fitness."

"Never!" he cried. "No one of that breed shall, with my consent, claim relationship with me. Some day I'll have that lying fellow's neck under my heel. Judkins's girl is the girl for you. A splendid match!"

"I can't quarrel with you, dad," I said, temporising, for I knew it was profitless to continue the discussion.

"Good lad!" he said, thinking I had weakened; and, leaving him pleased at the thought, I betook myself to the station and incidentally on the way to spend the usual matutinal five minutes with Margaret.

"Why so glum, Jimmy, boy?" she queried, her pretty face smiling a welcome. "More fireworks——?"

"Bacon charred—breakfast sp'iled—guv'nor mad—aunty riled," I returned lugubriously.

"Stanza the first," she cried, her eyes twinkling with merriment. "Any more?"

"Dinner 10th—guv'nor cries—'Must get cook—Advertise!'" I said, displaying the slip my father had handed to me.

"I suppose that's what you call terse verse," she laughed. "I trust you are not subject to these spasms."

"Precious moments quickly fly," I said. "With so much to say in so short a time condensation is imperative. But, seriously, Peggy, I'm worried. The old subject was raised again this morning, and he is still as bitter against your father and all that is his as ever. I despair of moving him. I begged him to be fair and let me bring you to him, knowing that you would jolly soon obtain for us his benediction, but he was flint."

"Your faith in my persuasive powers might receive a rude shock," she observed. "All the same, I should love the experiment."

"Where there's a will, there's a way," I quoted. "I've got to think out a scheme to bring you two promiscuously together."

"Perhaps I'll manage to ingratiate myself without assistance," she returned enigmatically.

I regarded her smiling face wonderingly.

"You have a plan?" I cried.

"Run away; the train is due," she said.

And I ran.

. . . . . .

"She's a treasure, Jimmy," cried the guv'nor over the billiard table, the following night.

"The new cook," said I. "There's no denying the dinner to-night was a bit special."

"Special! 'Twas the best dinner I've had here in months," he returned gleefully. "When she came, in answer to the advertisement, I must confess I was not impressed. Spectacled face, hair combed severely back, quietly dressed, owned to 23. Struck me as being too young to know her business well. References, however, perfectly satisfactory. Aunty was staggered at her appearance, and sniffed disapproval straight off the reel. That sniff decided me. 'You'll do,' I said. 'Wages, £25. When can you commence?' 'No time like the present,' said she. 'Good!' said I. 'I like that. What's your name?' 'Smith,' she returned. 'Not by any chance spelt S-m-y-t-h-e-?' cut in aunty, with intent to have a gird at me. The girl regarded her with a searching look that caused her cheeks to crimson, and I laughed right out. Half an hour later she was installed in the kitchen. She's a paragon. That dinner on the 10th is a safe success.'

"I congratulate you on your good judgment," said I.

"Pooh." said he, as he bagged the red and won the game; "I can read people as well as the next man. You're off form to-night."

"Oh, I'll do better this game," I said with a laugh.

The laugh was forced, for I was feeling decidedly dejected. That morning, just as the train moved, Margaret had acquainted me with the unwelcome news that she intended to start immediately on a visit to friends, and I should not probably see her for some weeks. There had been no time to remonstrate, not even the opportunity to obtain her address, and all day long I had been worrying myself with conjectures as to why she should have withheld the announcement until the last moment. The whim puzzled and vexed me. I could find no reason for the strange proceeding.

The game suffered, and I was heartily glad when presently an old crony of the guv'nor came in to relieve me. I wanted to be alone. Entering the library, I threw myself into a chair before the fire and gave myself up to musing. Aunty found me there when she came to say good night. There was a smile lurking in her eyes as she faced me.

"Hope springs eternal in the human breast," she quoted. 'Nil desperandum, Jim, my lad."

Here remark, no less than her manner, struck be as strange.

"You may rely on my discretion," she said, smilingly.

"Discretion!" I said. 'Why—what? I'm in a fog, aunty."

She laughed, and walking to the door, wagged a reproving finger at me."

"You're a deep one, Master James," she giggled, and disappeared, leaving me completely mystified.

The guv'nor's adulation of the new acquisition at every subsequent meal for days grew monotonous. It was prompted not only to air his superior judgment, but to score off aunty. A new dish—and I must confess there had ensued a pleasing variety—would occasion a surfeit of encomiums and put him in a good temper for the rest of the night. Aunty, though it was evident that the praise set her inwardly raging, said little.

"She's a capture!" declared the pater, as we sat at dinner on the evening preceding the day of the party. "I wouldn't let her go if she asked double. Everything up to time, and cooked to perfection."

"New brooms sweep clean," aunty sniffed.

"Nonsense!" he said, bristling, and, with a derogatory shrug, she gave him a second helping to the souffle.

"This is the menu she proposes for tomorrow, Jim," he said, passing over a written slip; "it is excellent. What do you think?"

"Why—well, I'm dashed!" I burst out, as I stared at the paper.

"What's the joke?" queried the guv'nor, regarding me surprisingly.

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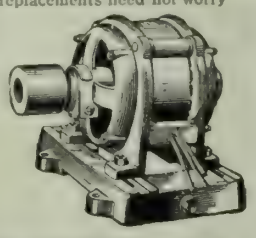

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"Joke" I said, controlling myself with an effort. "Oh, no joke at all. I was amused at the thought that this menu—perfect, as you say—emanated from a £25 cook. She must be a different species alflitted in and out."

"You're right. She's a wonder," cried the guv'nor. "My compliments to her, Selina, and the menu is approved in toto. Tell her also if the dinner is a success I shall have a pleasing surprise for her. I'll give her another £10. I will, 'pon my soul!"

Dinner over, I waylaid aunty in the hall.

"I want to see cook," I said, excitedly. "I must see her."

"Extraordinary request," she observed, trying to look shocked. "What can you have to say to the queen of the kitchen?"

"You sly person," I said, taking her gently by the shoulders. "Don't keep me on tenterhooks."

"I'll mention your wish, certainly," she said. "But it's incomprehensible."

"It's a stroke of genius," I cried, as I strode about the hall. "Well, aunty, what does she say?"

"Cook's compliments, and she's busy," she informed me. "If it is important you can transmit the message through me."

I glared at her astounded.

"She is terribly independent," she remarked. "The door was bolted after me, and I'm afraid you have no just cause to invade her territory."

Chagrined at the rebuff, I would have persisted, but the appearance of the guv'nor effectually restrained my impetuosity.

"Jim, I'm ready for that beating," he cried, taking my arm, and I was dragged off to the billiard room.

. . . . . .

The dinner was an unqualified success. Judkins, the city Alderman, Fallows, and Merryman, two other friends of the guv'nor—bon vivants all—were distinctly congratulatory, and the dad was in high feather.

When Julia Judkins and aunty had disappeared, and the cigars were handed round, he buttonholed me and whsipered, "Jim, I'll make it £20. I will, 'pon my soul. She's a culinary genius."

"Glad you're pleased," I said.

"Delighted! Absolutely delighted!" he said. "You'll entertain Julia, eh, you dog, while we four fogies have a hand. You know what's expected of you. We'll afford you every opportunity."

I shrugged my shoulders.

"She is a regular blue stocking," I said. "I'd much rather propose to the cook."

He laughed aloud at the notion.

"Gad! it would be a good way of securing her excellent services," he cried. "I could almost forgive you."

"Ran against old Tim Smythe this morning, Josh," remarked Merryman. "Told me he can't for the life of him understand why you cut him. Declares he was not responsible for the slanders of the election agents, and that, any way, he got every bit as good as was given. Says he hates to think you're sore about the business, and is perfectly willing at any time to make personal apology for anything which might have caused you annoyance."

"Straight fellow, Smythe," said Fallows. "Though we differ in politics, always respected him. Wouldn't be party to anything underhand, I'm sure."

"He said that, did he?" the guv'nor observed thoughtfully. "Well, I confess we did give him a nasty rap or two."

"I think you might bury the hatchet in an honourable peace," laughed Merryman "One day, perhaps soon, you'll have the chance to fight him again."

"It's not hard to meet and shake hands when the other chap comes halfway," said Fallows. "And life's short."

"I'll think about it," said the dad.

His admission and the prospect of a reconciliation set my heart thumping, my brain working with wondrous possibilities. Inwardly blessing the two peacemakers, I went to the drawing room and applied myself to the entertainment of the encyclopedic Julia with a zest. I encored her rendering of sundry fugues and ops until she blushed with pleasure. I suffered her dissertation on Wagner and his works, and smiled as if it were bliss to listen. I endured a lengthy rahpsody on Browning, with excerpts, like a martyr. I acted the drawing-room gallant to the life, although all the time I longed to make tracks for the kitchen.

"Well, Jim?" said the guv'nor, after the last handshake.

"It's impossible, dad," I said. "I'm not built on the philosophic plan. I want a wife, healthy, natural, and joyous—a loving woman, not an analytical machine. It isn't fair to expect me to spoil my life. Put yourself in my place. Would you marry this bookworm?"

His red face puckered up with a queer smile.

"I want a woman who can manage a home," I went on. "One who can cook—"

"Ah!" he said. "A—ah!"

"Exactly!" I agreed. "I, too, am a gastronomist."

"Well, well, we'll go to bed and sleep on it," he said.

And to bed we went.

I seemed to have slept but a few moments when I was roused to full consciousness by a prolonged whirring of the electric bell. The smothered sound of a hoarse, threatening voice downstairs urged me from bed, and, hastily donning a dressing-gown, I seized a poker and raced to the landing. The guv'nor rushed from his room, similarly attired, and together we hurried down the stairs, to stop, amazed, as the surprising scene was revealed.

The light from the open dining-room door showed us in the hall below the statuesque figure of a woman, clothed in a dressing-gown, with one hand pressed against the bell push, and the other outstretched and pointing a level weapon at some one within the room.

For one tense heartbeat we stayed inert as the desperate intruder, braving the pistol rushed through the doorway with jemmy uplifted. A strangled cry came involuntarily from my lips at the sight, and I took the remaining stairs at a run. The burglar gave one upward glance, and, like a hare, darted through the open doorway out into the darkness. Margaret—for the woman was no other—lowered the weapon and faced us, smilingly.

"Peggy!" I cried, and springing towards her, clasped her in my arms.

"Peggy!" cried the dad. 'Who the—why, that's my cook. What the dickens does all this mean?"

"Gently, Jimmy boy," she whispered, disengaging herself. "I'm not damaged."

"I happened not to be asleep, sir," she explained to the guv'nor. "Hearing a suspicious noise downstairs, I came down to investigate. I discovered the industrious gentleman who has just left rifling the side-board, and, after giving the alarm, proceeded to hold him with this ancient flintlock pistol, which I took the liberty of removing from the wall there."

"Peggy! Jimmy!" gasped the dad, gazing helplessly from us to my dear aunt, who, a wierd and awe-inspiring figure, stood behind him on the stairs. "Selina—is this my cook, or is it not?"

Aunty smiled, and stooping, whispered in his ear.

"What-at!" he shouted. "My cook—Tim Smythe's daughter?"

Margaret stepped forward, and faced him unblushingly.

"I trust I have given satisfaction, sir?" she said.

The dad regarded her sternly, but her smile disarmed him, and presently, the humour of the situation striking him, he burst out laughing uproariously.

"Gad! It's as good as a play," he cried. "This most excellent cook, this ferocious burglar trapper, the daughter of Tim Smythe, Jimmy, you young dog, you were privy to this?"

"'Pon my honour, no, dad!" I said. "I disclaim all credit."

"You knew, Selina?" he cried, turning on aunty.

"Yes, I knew," she said smiling.

He tried hard to look savage, but the laugh would have its vent. Striding forward, he took her two hands.

"Peggy, you've splendid!" he cried. "I'm going to see your father before this day's out. We've been bad friends long enough. Jim, my lad, we must try and keep her in the family. Selina, my pretty one, off to bed with you!"

And together, laughing merrily, we trooped upstairs.—AUSTRALIA OBSERVER.

THE CHAMPION OPTIMIST

We award the championship-diamond belt for optimism to a resident of one of the rural districts of Scotland.

As the story goes, an old man was sitting on the roof of his house during a flood, watching the waters flow past, when a neighbor, who possessed a boat, rowed across to him.

"Hello, Bill" he said.

"Hello, Sam," replied the other, pleasantly.

"All your fowls washed away this mornin', Bill?"

"Yes; but the ducks can swim."

"Apple trees gone, too, eh?"

"Well, they said the crop would be a failure, anyhow."

"I see the river's reached above your windows."

"That's all right, Sam. Them winders needed washin'!"

THE IRISH WAY

Two Irishmen were out for a row one day when their boat in some mysterious fashion capsized. One of them swam to the shore, and after taking a "breather" was seen to start back again toward the other man, who was wrestling with the waves.

"Why are you going back?" inquired a bystander.

"Oi had to save mesself foirst," replied Pat, "and now, begorra, Oi'm going back to save Moike."—Penny Pictorial.

Employee—I would like more salary. I am going to get married.

Employer—Sorry, but I'll have to reduce it. I am going to get married myself.—Sydney Post.

Visitor (to facetious farmer)—I'd like to know why on earth you call that white pig "Ink"?

Facetious Farmer—Because he's always running from the pen!

"I don't object to a man tellin' all he knows," said Uncle Eben, "if he sure-enough an' honestly knows all he tells."—Washington Star.

Tight Wad—If you lost me, you'd have to beg for money.

His Wife—Well, it would come natural.

Fair Visitor—Oh, don't trouble to see me to the door!

Hostess—No trouble at all, dear; it's a pleasure.—New York Mail.

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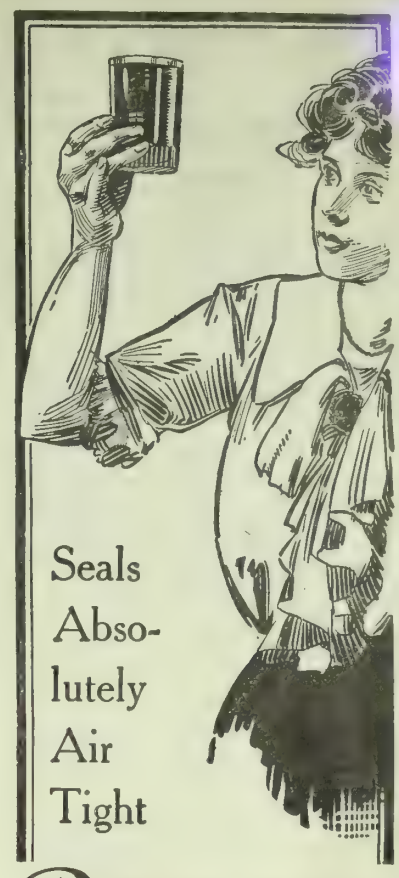

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PACIFIC COAST PATENT AGENCY, INC., STOCKTON, CAL.

THE MARKETS.

San Francisco, July 2, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Wheat is still rather easy at the recent decline, but quotations show no further change. The local market is decidedly dull, with buyers holding off and ample supplies coming in from the north.

California Club, ctl	$1.62½@1.65
Forty-fold	1.65 @1.70
Northern Club	1.62½@1.65
Northern Bluestem	1.72½@1.77½
Northern Red	1.60 @1.80

BARLEY.

Choice feed shows a little wider range, with a tendency downward. Trading remains very quiet, with little interest on the part of either buyers or sellers. Arrivals of new barley have not yet been very large, and growers appear in no hurry to sell.

Brewing and Shipping	Nominal
Choice Feed, per ctl	$1.30 @1.40
Common Feed	1.27½@1.30

OATS.

Both red and white oats are offered a little more freely, but find little demand. Both varieties are easy, white being a little lower.

Red Feed	$1.65 @1.85
Seed	Nominal
Gray	Nominal
White	1.60 @1.65

CORN.

Trading is very slow on all descriptions of corn, but holders are not forcing their stock on the market, and there is a little more firmness than last week, prices standing the same.

Cal. Yellow	$1.55 @1.60
Eastern Yellow	1.50 @1.55
Eastern White	Nominal
Kaffir	1.50 @1.55
Egyptian	1.70 @1.75

RYE.

There has been a little business of late at a little higher prices than for some time past, and the small amount of desirable stock offered is held at the range quoted.

Rye, per ctl	$1.45 @1.50

BEANS.

Bean prices have not chaged for the last week. Limas continue to find considerable demand, owing to the scarcity of spot stock, but otherwise the market has quieted down, and there is little inquiry from any quarter, buyers being reluctant to carry any stock beyond nearby requirements. The remaining supply of several varieties is light, keeping prices firmly up to the old quotations, though some of the colored descriptions are easy.

Bayos, per ctl	$3.15 @3.25
Blackeyes	3.15 @3.35
Cranberry Beans	4.70 @5.00
Horse Beans	1.90 @2.15
Small Whites	5.40 @5.50
Large Whites	4.50 @4.75
Limas	5.75 @5.90
Pea	Nominal
Pink	3.00 @3.20
Red Kidneys	3.40 @3.60
Mexican Red	3.75 @3.80

SEEDS.

There is very little movement of seeds of any description at present, and values stand nominally at the former level.

Alfalfa	12½@ 14c
Broomcorn seed, per ton	$27.00@28.00
Brown Mustard, per lb	3¾c
Canary	6 @ 6½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

Prices are well maintained at the same quotations that have prevailed for a long time. Trading is quiet but steady, the total movement in this market being about normal.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.60 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Notwithstanding the holidays, local business is a little more active than for some time past, the arrivals showing a marked increase. Alfalfa continues to appear in considerable quantities, but most of the increase in arrivals consists of grain hay from the Sacramento district, where the production was fairly large. The increased offerings have brought an easier feeling in the local market, and while quotations are about as before, the market does not clean up very readily. The summer season of heavy shipments is expected to be shorter than usual, owing to the light crop, though heavy arrivals are expected for the next month while the consuming trade is stocking up for the season. Buying by dealers for shipment to this market has been on a small scale, as prices are too high for speculative operations, and there is some doubt as to whether the present range can be held throughout the season. Lately buying in the country has been almost entirely for immediate needs.

No. 1 Wheat, or Wheat and Oat	$18.50@20.00
do No. 2	15.50@18.00
Lower grades	15.00@15.50
Tame Oats	15.50@20.00
Wild Oats	14.00@16.50
Alfalfa	12.50@13.50
Stock Hay	9.00@11.00
Straw, per bale	45@ 95c

FEEDSTUFFS.

With more alfalfa available, alfalfa meal is considerably lower. Oilcake meal also is lower, and cocoanut cake is again quoted, after being practically out of the market for a long time. Rolled barley has weakened in sympathy with the whole grain.

Alfalfa Meal, per ton	$20.00@21.00
Bran, per ton	28.00@29.00
Oilcake Meal	33.00@34.00
Cocoanut Cake or Meal	25.00@26.00
Cracked Corn	34.00@35.00
Middlings	34.00@36.00
Rolled Barley	29.00@30.00
Rolled Oats	35.00@36.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

New yellow onions are quoted at a little wider range, but both red and yelow varieties are steady, while garlic is a little lower. Supplies of most summer vegetables are excessive, and a good deal of stock has to be carried over from day to day and sold at unsatisfactory prices. Green peppers, string beans and green peas are very cheap, and a large amount of the latter has gone to waste, failing to find a market anywhere. Asparagus is cheap again, and while some fancy lots bring good prices, the greater part of the offerings goes to canners at the inside figures. Tomatoes are weakening, but considerable stock is still coming from southern California and Texas, Merced offerings being hardly enough to supply the market. Green corn shows a narrower range, but on the whole prices are well maintained, notwithstanding the increasing supply. Cucumbers and summer squash are in liberal supply, with declining prices.

Onions: New Yellow, sack	70@ 85c
New Red, sack	60@ 65c
Garlic, per lb	3@ 4c
Cucumbers, per box	35@ 50c
Cabbage, per ctl	40@ 50c
Carrots, per sack	75c
Cauliflower, per doz	40@ 50c
Rhubarb, box	75c@ 1.00
Green Peppers, lb	3@ 5c
Green Peas, lb	1@ 2½c
Asparagus, box	50c@ 1.25
String Beans, lb	1@ 3c
Summer Squash, lug box	50@ 75c
Green Corn, sack	1.50@ 2.00
Okra, box	25@ 40c
Tomatoes, box	35@ 40c
Eggplant, lb.	5@ 7c

POTATOES.

Old river stock is about cleaned up, and is hardly worth quoting. New potatoes are fairly steady at a slight decline, with a better demand for shipment than for some time past.

Oregon, ctl.	80c@$1.00
New River Whites	90c@ 1.25

Dairy Produce.

POULTRY.

Eastern chickens are still coming in freely, but the rush of California stock has fallen off, and the market is getting into rather better shape. So far there is no quotable improvement in prices, but offerings are cleaning up well, with a very fair demand, and some advance is expected. Hens, as usual, constitute the bulk of Eastern arrivals, but they find a very good market.

Large Broilers, per lb	21 @22 c
Small Broilers, per lb	21 @22 c
Fryers, per lb	22 @22½c
Hens, extra, per lb	15 @16 c
Hens, large, per lb	15 @16 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	10 @12 c
Young Roosters, per lb	22 @24 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.50@ 2.00
Ducks, doz.	4.00@ 6.00
Turkeys, live	21 @22 c

BUTTER.

While the week opened with a slight drop in extras, the market has recovered all its former firmness, and extras stand the same as last week, with firsts ½c lower. There is quite a large movement in the local and shipping trade, and considerable stock is still going into storage.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	28	28	28	27½	28	28
Firsts	27½	27½	27½	27	27	27

EGGS.

The egg market is in rather poor shape at present, extras being 1c. lower than last week. There is not much local demand, the storage operators having about all they want, and there is some competition with Eastern stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25	24½	23½	24	24	24
Firsts	22½	22½	22½	22½	22½	22½
Selected Pullets	23	22½	22	22½	22½	22½

CHEESE.

No further change is noted in cheese, flats being firm and Y. A.'s steady at the old quotations, with a fair demand.

Fancy California Flats, per lb	15 c
New Young Americas, fancy	17½c
Monterey or Jack Cheese	15@15½c

Deciduous Fruit.

The berry market is weak all around, with liberal supplies and lower prices for everything but currants, which are a little higher. The few old apples still offered are firmly held. New apples, both Astrachans and Gravensteins, are in fairly large supply for this season, and find only limited demand locally, though some large lots have been taken for export. The Gravensteins sell up to $2, while the Astrachans bring $1 to $1.50. A few Bartlett pears are coming in, and are held at high prices. Cherries are kept well cleaned up, with decreasing arrivals, and prices are firmly held. Apricots are a little lower, but supplies are moderate, and all offerings find a good demand. There is considerable business in bulk stock, lugs selling at $1.50. Offerings of peaches are increasing, but prices are pretty well maintained, especially on small packages. Good fruit in baskets sells around $1. Supplies of ordinary plums are excessive and prices irregular, but first-class lots bring almost as much as last week. Figs are easier, with large offerings. A good many cantaloupes have been held over and sold at low and irregular prices, but good fresh stock is firm, while watermelons are declining with larger arrivals.

Loganberries, chest	$ 3.00@ 4.00
Blackberries, chest	3.00@ 5.00
Gooseberries, lb.	7@ 8c
Raspberries, chest	5.00@ 7.00
Currants, chest	6.00@ 9.00
Strawberries:	
Longworth, chest	5.00@ 7.00
Other varieties, chest	3.00@ 6.00
Apples: New, box	1.00@ 2.00
Newtown Pippins	1.75@ 2.00
Pears, Bartlett, box	1.75@ 1.90
Cherries: per box	50@ 75c
Bing, in bulk, per lb	9@ 10c
Black, lb.	5@ 8c
Royal Ann, lb	5@ 8c
Apricots, crate	85c@ 1.00
do lug box	1.00@ 1.50
Peaches, box	65c@ 1.00
Plums, crate	75c@ 1.00
Figs: Black, drawer	75@ 90c
Cantaloups, large crate	1.50@ 2.00
Watermelons, per doz	1.50@ 3.00

Dried Fruits.

No further change has been made in either spot or new-crop prices, and for the present the market shows less feature than usual at this season. Packers report very little interest on the part of buyers anywhere, attributing the dullness to a shortage of ready money and uncertainty as to the general trade outlook, while the movement in the country is retarded by differences of opinion on values between packers and growers. Growers generally seem to be taking a rather firm view of the situation. There is a rather easy feeling in old-crop peaches, which are slow to clean up. Prunes also lack firmness, though there are some buyers in the market, and there are reports of sales in the Santa Clara district above current quotations, the growers being very slow to sell at the prices offered. While some new apricots are appearing, little business is being done, growers, on account of the short crop, being greatly dissatisfied with the quoted offer. Raisins are unchanged, but a somewhat better feeling is caused by progress on the part of the Associated company. The New York Journal of Commerce says:

"Brokers and jobbers in spot California stock report a very satisfactory demand, especially in prunes of the larges sizes. In fact, trade is held to be much better than usual ot this time of the year, which is attributed the the relative scarcity and than usual at this time of the year, which berries. In future prunes there seems to be as yet little buying by Eastern distributers and as the export demand is a less prominent factor than it was, advices from the Coast reflect an easier feeling on the part of packers. However, it has not gone so far as to cause an actual decline in prices, largely for the reason that the growers maintain a confident attitude. In fact some authorities go so far as to intimate that such weakness as is exhibited by packers has a purpose of influencing the views of growers more than those of buyers in distributing markets. The same conditions as exist in the California prune market are said to be applicable to future peaches. Apricots, being a short crop and well cleaned up in consuming markets, are firm.

"There is little if any movement in spot raisins at present, but that is usually the case at this time of the year. The market for futures is yet to be made and depends upon the crop, which at latest advices had a most promising outlook."

Evap. Apples, 1912 crop, per lb	5 @ 6 c
Apricots, 1913	11 @12 c
Figs: White, 1913	3 @ 3½c
Black, 1913	2½@ 3 c
Calimyrna, 1913	4½c
Prunes, 4-size basis, 1912	3 c
do 1913	4 c
Peaches, 1912	3½@ 4½c
do 1913	4 @ 4½c
Pears, 1913	5 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912	3 c
do 1913	3½c
Thompson's Seedless, 1912	4½c
do 1913	4 c
Seedless Sultanas, 1912	3½c
do 1913	3 c

Citrus Fruits.

Those who have kept oranges to market during the past two weeks have made good money, as the Eastern demand has taken all the fruit offered, at big prices. At the fruit auctions as high as $7.70 per box has been paid for valencia oranges, and lemons have sold for $8.25 and $8.75 delivered. Shipments have fallen off somewhat and the balance of the season promises to be one of prosperity for the valencia growers.

"On Monday, June 30, at the New York auction, valencias averaged $7.20 down to $1.60, the latter being in poor shape. The average sales were around $4.65 per box. The Boston market on the same day was not as high as New York, nor was it as low. The average prices were about $4.60, while the highest was $6.85 per box. Philadelphia paid almost as much for oranges on Monday, while other market points were a trifle lower.

Lemons brought on auction at St. Louis the same day from $6.20 to $7.85. Other auction points paid about the same.

Shipments from now on until the ballance of the season are expected to run lighter than for the past two months, as there is not much fruit left in the State.

Oranges are moving on about the same moderate scale as before at San Francisco, prices being steadily held. Lemons and lemonettes show a further advance, and find a very fair demand in the absence of Mexican limes.

Oranges, per box—	
Valencia	$ 4.50@ 6.50
Navels	2.50@ 4.50
Grapefruit, seedless	2.50@ 5.00
Lemons: Fancy	7.50@ 9.00
Lemonettes	6.00@ 7.00
Limes	Nominal

Nuts, Honey, Hops, Etc.

NUTS.

There are still a few odd lots of old almonds in the hands of the trade, values being about as before, but there is not much trading at this season. Aside from the well known crop shortage, there is nothing to report yet regarding the new crop.

Almonds—	
Nonpareils	17½c
I X L	16½c

Drakes	12½c
Languedoc	11½c
Hardshells	8 c
Walnuts, 1912 crop—	
Softshell No. 1	16 @16½c
Ne Plus Ultra	15½c
Hardshell No. 1	15 @15½c
No. 2	10½c
Budded	17 c

HONEY.

Supplies of new honey are gradually increasing, but so far there has been little accumulation, and offerings are readily marketed at the old quotations.

Comb, white, new	15 @17 c
Amber	11 @12 c
Dark	9 @10 c
Extracted, white	8 @10 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Business locally remains quiet, but supplies are moderate and closely held, prices standing as before.

Light	30 @31 c
Dark	26 @28 c

HOPS.

No large movement of the new crop is reported as yet, and there is not much business in old stock, which is scarce. Values show no quotable change.

1912 crop	12½@16 c
1913 contracts	13 @15 c

Live Stock.

Light and medium calves show a fractional advance, and all weights of live hogs are also a little higher. There is a general movement of cattle and sheep from the south, where feed is giving out, to northern ranges, but this has so far had little apparent effect on the local market.

Grass-fed Cattle—	
Steers: No. 1	6¾@ 7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	5¾@ 6 c
No. 2	5¼@ 5½c
Bulls and Stags	2½@ 4½c
Calves: Light	6¾c
Medium	6¼c
Heavy	5 @ 5½c
Hogs: Grain-fed, heavy	7¼@ 7½c
150 to 250 lbs	7½@ 7¾c
100 to 150 lbs	7¼@ 7½c
Prime Wethers	4¾@ 5 c
Ewes	3½@ 3¾c
Lambs: Suckling	5½@ 5¾c

DRESSED MEATS.

Steers	12 @12¼c
Heifers	11 @11½c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	10½@11 c
Ewes	9 @ 9½c
Suckling Lambs	11 @11½c
Dressed Hogs	12½c

WOOL.

Some large sales of Oregon and Idaho wool are reported, prices being somewhat lower than last year. There is also considerable movement of California wool, but local dealers say the buying has been mostly by manufacturers, dealers showing little interest in the market. Local buyers quote the old prices, as follows:

Spring clip:	
Southern mountain, free	8 @11 c
Northern, year's staple	13 @14 c
Humboldt, year's staple	18 @19 c
do short	13 @14 c

HIDES.

The hide market remains dull and weak. Many California tanneries have closed, and there is no demand of any consequence. Sheepskins also are weak at the old prices.

Heavy Steers, over 56 lbs.	14 c
Medium	13 c
Light Steers, under 48 lbs.	12 @13 c
Heavy Cows, over 50 lbs.	12 @13 c
Light Cows, 30 to 50 lbs.	13½c
Kip	14 @15½c
Veal	17 @18½c
Calf	17 @18½c
Dry—	
Dry Hides	24 @25 c
Dry Kip, 10 to 15	24 @25 c
Dry Veal, 5 to 10	29 c
Dry Calf, 7 down	29 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25@ 50c
Dry	75c@ 2.00
Sheep Skins—	
Long Wools	70c@$1.00
Medium Wool, 6 to 9 mos.	45@ 75c
Short Wool, 3 to 6 mos.	35@ 50c
Lambs	30@ 65c

HORSES.

Present conditions in the local horse market are indicated by the fact that a lot of stock sold at auction recently at an average price of about $30. The stock was lighter than most of the weights quoted, unbroken and otherwise not especially attractive, and it is evident that such stock is not wanted here. Even for stock of fair weight and desirable type there is no very strong demand, and only good heavy horses can be counted on to bring anything like satisfactory prices.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

DECIDUOUS MARKET REPORT.

Prices in the Eastern auction markets Monday were slightly lower than for last week, partly because there was an accumulation of two days' shipments on hand to dispose of.

The prices in the leading markets, as reported by the California Fruit Distributors, were as follows:

New York—Cherries: Royal Anns, $1.25; Republicans, $1.35. Plums: Tragedys, $1.75; Climax, $1.50; Burbanks, $1.45. Royal cots, $1.60. Peaches: Triumphs, 90c.

Chicago—Plums: Tragedys, $1.60; Burbanks, $1.25; Climax, $1.40. Apricots, $1.85. Peaches: Triumphs, $1.15.

Boston—Cherries: Royal Anns, $1.25; Bings, $1.50; Republicans, $1.45; Tartarians, 80c. Plums: Tragedys, $2.40; Climax, $2.30; Burbanks, $1.65; Clymans, $1.40; Wicksons, $1.25. Royal cots, $1.60. Peaches: Alexanders, $1.05. Figs, $1.75.

Approximately 19 cars of fruit from the Sacramento river district, the largest consignment that has reached Sacramento this year, came up the river Monday and was transferred to refrigerator cars Tuesday.

The Earl Fruit Company Tuesday shipped from California the first carload of Bartlett pears produced in the United States this year. They were from the big orchard of Hayward Reed at Mikon Station, across the river from Sacramento. Reed also shipped the first box of Bartletts to the Eastern markets.

PUBLISHER'S DEPARTMENT.

We again wish to call our readers' attention to the "Queries and Replies" in our columns. This feature of the RURAL PRESS we consider is perhaps the most valuable of any in the paper, and we are glad to know that more and more questions are coming in daily. In the majority of instances the queries are answered through private correspondence, only those of general interest being published. Let us have more of them, but please bear in mind two things: You must sign your name to the query, or we will not pay attention to it; when you want an answer by letter, always send an addressed stamped envelope with the query. Even then the party answering is doing so in pure kindness to you. Remember we pay our editors for writing for the RURAL PRESS and not for private correspondence.

Did you notice the announcement in our last issue to the effect that the third edition of the book "California Vegetables" was ready for delivery? Send in your orders, we can fill them the day we receive them.

A TIME AND LABOR SAVER.

Among the many improvements in farming equipment, the Portable Agricultural Railway stands well in the forefront as a labor and money saving device. The possibilities of the agricultural railway on ranches, orchards, vineyards and sugar beet fields where the high cost of teaming has seriously handicapped development, are many. It is a conceded fact that a horse can haul four times as much on a railway track as on a good wagon road. The track therefore saves the expense of maintaining three horses. As the track is shipped ready-made in sections, with the steel ties firmly attached to the rails, the ordinary farm laborer, with the aid of a monkey-wrench, can lay lay out in less than an hour, a system of a thousand feet or more of complete railway, in true alignment and immediately available for use. The track is of steel, very rigid, and owing to a special method of clip fastening, can be depended upon to be always true to gauge. Realizing the inefficiency of the wooden track, quite a number of ranchers bought steel tie rails, which they spiked down on wooden ties. While this track was a decided improvement, it was also very expensive to maintain. The farmer's lack of experience in railroad building compelled him to experiment and waste valuable time and materials in trying to build a road on which cars would run. With the Portable Steel Track in use, all annoyance, trouble and expense are eliminated. As the track comes ready-made in sections of fifteen feet, it can be easily and quickly laid. At the end of the season, quick work can be made of unlocking the joints between sections and stacking the track away in a neat and compact manner. Between seasons the track will be found useful in handling stable waste an dfor other purposes. Without doubt this system is the best and most economical way of handling fruit. It is being adopted with great success all over the country.

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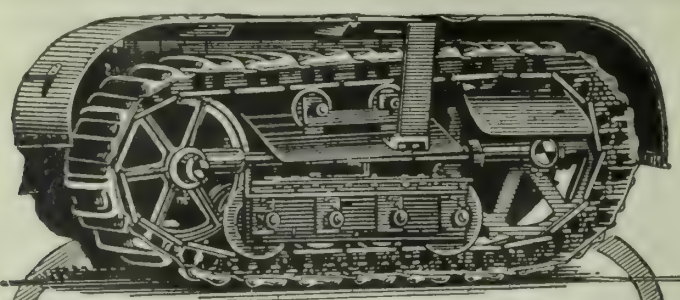

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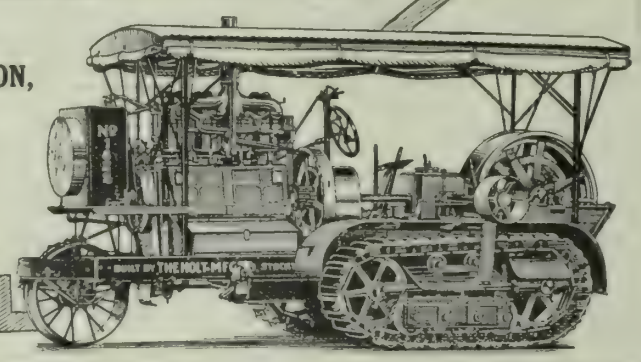

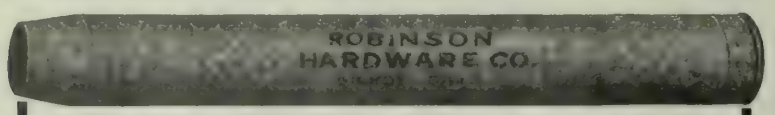

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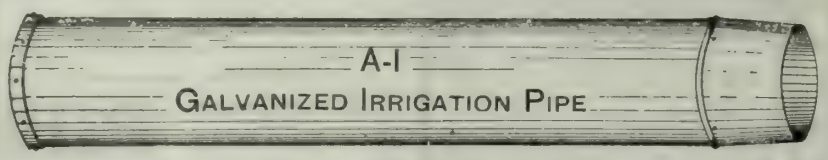

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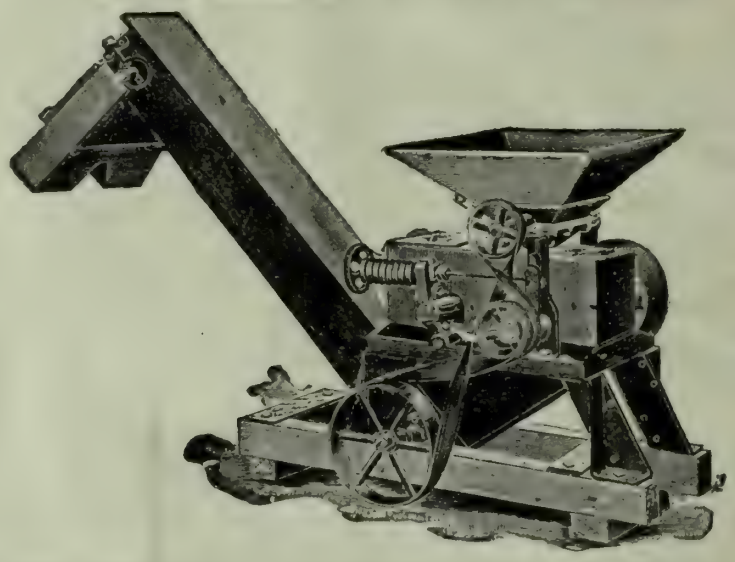

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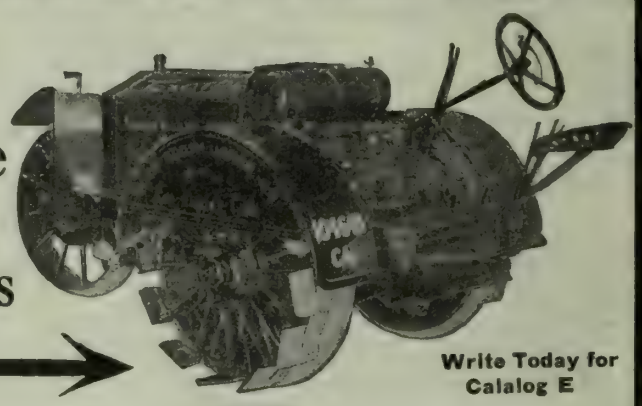

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Vol. LXXXVI. No. 2. SAN FRANCISCO, SATURDAY, JULY 12, 1913. Forty-Third Year.

AN IMPENDING REVOLUTION.

[BY THE ASSOCIATE EDITOR.]

In using the above heading we are not thinking of any disastrous conditions that have to be overthrown with toil, strife and tribulation. It simply is about the most appropriate way of describing the change that seems to be heading for the alfalfa-grower and the livestock business in California. It will not be a change from bad to good or good to bad, but simply the adoption of a different way of doing things that will be good, as present conditions are good, and yet radically different from the present situation.

The thing we refer to is mainly the use of the alfalfa ranch as a stock-feeding establishment, the making of connections between the range business and the small farmer on intensively cultivated land, on land that is irrigated and producing the utmost from the rich, deep soil of California valleys, mostly of alfalfa, as at present. It is just the same thing as is regular, customary and fitting over the corn belt of the Middle West, and there is not the slightest reason apparent why he came to the farm. This is called "finishing," as is most fitting here. In fact, everything is pointing that way and has been fired at us from several different angles very recently.

The proposition in the Middle West is simply that of a manufacturer, so to speak. He takes the raw product, the steer shipped in from the range and designed for the stockyards, puts him on the farm, fires into him corn and such, and sends him off again to the stockyards worth more per pound and weighing many pounds more than when he came to the farm. This is called "finishing," as is most fitting, just as the manufacturer gets raw material and turns off a "finished" product.

A rather extreme illustration of what can be accomplished can be taken from prices in San Francisco now. Stockers and feeders are quoted at 5 to 5¼ cents. Extra choice hay fed steers from 1050 to 1150 pounds are quoted from 7¾ to 8¼ cents, a gain of 2¾ to 3 cents for the original weight of the steer, to which must be added the gain in weight by feeding, which would be worth 7 cents or so per pound. Of course, this is an exceptional year for a range of prices between poor and well finished cattle, and it is not an easy job to take a run-down animal and turn him into an extra choice one. It is merely the suggestion of opportunity.

Eastern quotations the other day ran for stockers and feeders 5.75 to 8.10, and for slaughter cattle 7.20 to 9.00. That is typical of the difference in prices there.

Why the Change Here.—People everywhere in California are considering the same plan. This is largely due to the present scarcity of feed on the ranges which makes poor cattle go at low prices. To offset this condition is the high price of alfalfa, which is in demand for everything, but yet is tempting for stock finishing.

The state of mind was expressed in private conversation at the recent meeting of the California Live Stock Breeders' Association when one acquaintance put the matter like this: "Prices for alfalfa are high and have been for several years, but everyone with any foresight has to figure out what he is going to do with his alfalfa after we have had a season with plenty of rainfall. The dairy cow will always eat a very large amount and the market will always take a great deal, but what is to be done with the surplus?

"The most logical thing is to take feeder cattle from the range, fatten them up and sell them to the slaughterer at advanced prices. This is something that is sure to come, as it has come in the Middle West, but the problem is, how are we to get started."

There is this in the way. The range man has shipped direct to the packer, right off the grass. Some of the large stockmen have been feeding alfalfa to a greater or less extent, have bought cattle to put on

(Continued on Page 37.)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., July 8, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.14	.14	.04	66	52
Red Bluff	.00	.00	.00	102	62
Sacramento	.00	.00	.00	100	48
San Francisco	.00	.00	.00	81	52
San Jose	.00	.00	.00	94	46
Fresno	.00	.00	.00	106	60
Independence	.06	.06	.00	98	58
San Luis Obispo	.00	.00	.00	90	52
Los Angeles	.00	.00	.00	88	60
San Diego	.00	.00	.00	78	60

The Week.

While the editor is journeying over Europe, and looking into the proposition of rural finance, his special province, the part of the crew that remains with the ship evidently should keep their hands off. Nevertheless, we just have to say that the sort of stuff the editor is turning off lies as near the fundamentals of the agriculture of the future as it is possible to get, and is pretty near present-day California agriculture, too. Those countries of Europe are long settled and by people who are our own stock. It might be said that they have gotten down to a final method of operation, and from their ways of doing, we can perhaps guess our ultimate ways of doing.

There are two possible futures before us. One is some such tenant farming as described as existing in Italy a week or so ago. There the tiller of the soil owns no soil, nor does his mind plan the farm management and the selling of farm products. The owner lives in town, charges as heavy a rent as the land will carry, attends to the principal business of the farm, and by his removal from the soil for several generations or more it can be guessed is hardly a capable farm manager, nor is it to be believed that he is a person of admirable character. No parasite is. Such a method of operation is repulsive to American sentiment from tip to toe. If we carry that out we will have neither a good citizenship nor good farms, or future generations can stand what present Americans cannot.

Our ideal is the independent farmer, the man who tills his own soil, perhaps with some extra help, uses his own brains, plans his own work, sells his own products and directs his own conduct. We have also our city farmer, really a manufacturer or business man, who hires a manager, perhaps is his own farm manager, but has every bit of work done by hired help. At this stage of land development such "farmers" are good for the country, but never a one can get the results per acre that a capable small farmer can, and nine out of ten hope that when the country settles up more to sell out to small men.

Our greatest hope for the independent farm owner is in just the application of what Prof. Wickson is telling about, good farm financing. We have got the solution of one part of the problem—marketing—under way, with our wonderful co-operative organizations. In Europe they have got the other part, the financing of the individual farmer. If there they use it for the ultimate gain of the State, not the individual, or for the gain of the owner, not the tiller of the soil, it is up to us to use it for the man who is owner and farmer both, as we use co-operative marketing now. The future of American agriculture is so bright that there is no doubt but what we shall land out where we should land, and the work of the American Commission at present in Europe, if we can judge from Prof. Wickson's accounts in each issue, will give the car of progress a mighty shove.

Out in the World.

[BY THE EDITOR.]

[In our last issue Professor Wickson discussed in outline the methods of typical banking institutions dealing largely in credit to farming institutions and enterprises and endeavored to indicate their significance and the attitude of governments and the upper classes toward them. Comments were also made upon the motives which may determine or influence this attitude. In this issue other institutions in which actual producers more directly participate are considered.—ASSOCIATE.]

Structures for the relief and advancement of agriculture in Europe seem to be building in two directions: from the top downward, and from the bottom upward. In the former case the roof may be said to be held aloft by the baloons of patriotism, which includes pure patriotism (love of the country and pride in it), and mixed patriotism (motivated by political and class interests, to varying degrees). In the latter case, it must be acknowledged, the materials have a certain buoyancy administered from above which reduces their gravity, but they seem to be actually rising from below. To make the whole proposition a little more concrete, which is desirable from a structural point of view, we may remark that the banking institutions which we have cited in earlier writing are clearly building from above downward toward the common people. Not only is there no desire to conceal this fact, but the fact is gloried in and a vigorous propaganda is admitted. Take, for example, the great savings bank which has been regenerated from commerce to agriculture, as described in a previous letter, is reaching constantly downward to uplift more agriculture for its own sake and has government favors to that end. Again, the great federated co-operative bank which was organized for agricultural purposes, it, too, maintains an active propaganda to get more farmers to make organizations which will be tributary to its federation. In this respect these two are but typical of other institutions which we have not yet attempted to characterize or even enumerate. All these great affairs, which handle millions of reserves and deposits as freely as our country banks do nickels, are builded downward from the top which is in the clouds of governmental sublimity. We have nothing like them in this country. Whether we need them or desire them is a question which we are still thinking about, and the reader is welcome to take a thought for himself also. We must hurry along to look at something else which is building from the bottom upward, with the help of such attraction from above as has been hinted at. On the face of it it may seem to be a mechanism by the aid of which the lower agricultural classes can lift themselves by their own boot-straps. All that we will say of that at the moment is that they do seem to be going up. Look at it through this block of concrete:

A Farmers' Bank Which Builds Itself.

Near Vienna in Austria we visited a Raiffeisen type of bank which looked more like the office of a country notary who had gone to a baseball game than it did like a bank. There was a counter made by the village carpenter, half a dozen wooden chairs of kitchen descent, a couple of iron boxes such as a man might buy to keep cheese out of the way of rats. The flies had frescoed the walls and the spiders had filagreed the windows. And yet it was a bank, and the people seemed to take more pride in it than our people of Podunk do in their steel-frame First National with its sumptuous onyx fittings.

It was a bank of so-called pure co-operation, composed of members each of whom has one vote in the affairs of the bank, and no more, no matter what his interest in it may be. There is no voting shares of stock, and therefore concentration is impossible. Every member assumes unlimited liability for losses; that is, each is responsible for losses to the full amount of his property—but that does not frighten anybody, for the total losses during the last ten years have been less than $60. The bank was organized in 1893 under government initiative to meet the needs of small farmers growing wine grapes on the bank of the Danube, using a shallow soil over rock which frequently cropped out—the poorest soil and the hardest subsoil we ever saw grapes growing on, and each grower had about as much land as would keep a goat, according to our notion of requirements. But these people got some grapes on these hard slopes, and they always needed some money to carry their business between harvests. The government saw that to have money they must learn to store it up for themselves. As the local mechanics and shop-keepers got a large part of whatever money came from the little wine crop, a scheme to get them to deposit it in a local bank to be loaned back to the farmers as they needed it in making crops, would be a way to do that and about the only way anyone could think of. It was a scheme to make one hand wash the other and still keep the water in the basin. And so in 1893 a co-operative bank was favored by the government, and after due exhortation as to what a neighborhood could do for itself by co-operative accumulation and credit, 30 people well known to each other agreed to go into the enterprise together, each subscribing for one share of the par value of $4. The government gave a grant of $50, which was enough to pay for the counter, chairs and cheese boxes aforementioned, and to provide a little stationery and promotive printing. According to the usual plan for such banks, loans were made to members only, so every applicant had first to stand for election, and if not elected that was the end of him. Naturally when every man has to stand for the trustworthiness of all his associates, he takes care who is elected. Each member has to take one share of the stock to qualify after his election. Although such care is taken in taking in men, there is no scrutiny in taking in money. Anyone can deposit money, but only the elect can borrow any of it. Now see what has been done in twenty years:

1893—30 members, $120; government grant, $50; no deposits.

1912—350 members; surplus capital, $5,552; reserve fund, $2,666; deposits, $106,666; loans,

$91,800; net profits for 1912, $72; ownership of building which cost $7,000.

The net profit for the year is considerable when you remember that the bank is not expected to make any profit at all. The shareholders get 4% on the money paid in, and that is all they are expected to get, but by some mishap they would have been entitled to draw twenty cents each if the managers had not turned it into the reserve fund before they could get their hands on it. Now how could such a statement as that for 1912 have come about?

The bank is managed by the following directors: (1) a local harness maker; (2) the local Catholic priest, who is also the book-keeper; (3) a pensioned army veteran, who is also cashier; (4 and 5) small vine growers. The only paid officer of the outfit is the book-keeper, who began at $20 per year and has been advanced by easy stages until he now gets $100 for his year's work. The bank is open for business one day of each week.

Interest at 4% is paid on deposits; interest at 4¾% is charged on loans. All loans are made on short term paper, with two endorsers, usually for one year, but for two years in exceptional cases, and the normal rate of interest for such loans in commercial banks is 6 to 7%. This country co-operative bank is able to save the borrower 1½ to 2½% because its officers work for nothing and its shareholders receive only the rate paid on money actually paid in and no dividends. This kind of operation is explicable only on these grounds: first, the motive is altruistic, the motto "one for all and all for one" being freely quoted in answer to expressions of wonder as to how such things can be; second, altruism is only possible on the basis of long and intimate personal acquaintance such as can only exist in a neighborhood composed of people known to each other for generations. The application for membership and a loan sets in motion all the wheels of local gossip, and only a very clean person can get through the machinery. The directors examine applications for loans and these directors are elected to serve four years by the assembly of members. Thus the members are kept close to the management, and as all are liable for every cent of property they own, there is no lack of scrutiny into the affairs of all borrowers. The specific purpose for which the money is borrowed has to be made known, and inspection is made to be sure that the money is not otherwise used. The institution itself is examined by the provincial board appointed by the government; also by the "central bank," which is made by affiliation of all individual banks of its kind, and the kind itself is controlled by special statute passed for their establishment and regulation. Any borrower who did not pay interest promptly and repay the loan itself when due would run against everybody from the parish priest to the throne—not to speak of the hard looks and words perhaps of his neighbors, who know how bad he is without looking in the village newspaper. It must be said, however, that a good man in hard luck receives all the kindness which he could expect so long as he comes through without causing his neighbors to lose money—and such a thing, as already stated, seldom if ever occurs. These people are scrupulously honest and will starve rather than wrongly owe a man anything, besides they are locked up with one or two endorsements, which they never could get unless their neighbors thought well of them. Therefore the outside world is safe in depositing because the visible security is the grand total of all the property of all the members of the association and all the good sentiment there is in the community. It is about the highest possible conception of financial and moral security.

A Two-Million Business in a Back Parlor.

What has just been said about the motives and methods of Raiffeisenism applies to it in all its forms, and these are various beyond description. We have chosen this little bank on the bank of the Danube, because it had a building of its own and a sign-board on the village street. There are others of the same type which are much greater in property and in accumulated capital, and there are great propagandist establishments which are born of it, which we may find opportunity to expound later, but lest the reader may get the idea that they are all rather great institutional affairs, we rush quickly in the opposite direction and recall a Raiffeisen bank which had no outward signs whatever of bankhood.

In a small village house in Bavaria we were welcomed by an interesting man, considerably beyond middle age. He had been previously mentioned to us as the village banker, and we made an unannounced call upon him with a request that he show us his outfit and tell us how he did the banking business of the community. He cordially led to his living room, which evidently serves the dual purpose of dining and informal social intercourse. His dining table was his banking counter and a simple iron box was the safe deposit annex, for it contained all his business books and papers, including the records of his bank and what money he needed for current use. He told us that his co-operative bank was organized 15 years ago with 118 members, each of whom agreed to pay in $25 in ten yearly installments of $2.50 each, and to receive interest at 4% for money actually paid in. It now has 457 members, all of whom came in on the same terms, except that in later years they have received 4½ and 4¾% on their payments.

On the day of our visit, he had $190,000 in outstanding loans and $175,000 in deposits, which, as previously stated, came from both members and non-members. He had during the year 1912 a "general turn-over" of $2,500,000—which means the grand total of all transactions which were recorded in his neatly-kept books. Of this he received one-tenth of one per cent for his services and expenses—that is, $2500 for the yearly cost of his banking. He assured us that has bank had not lost a "mark" (25c.) since its foundation. He had been paying recently 3½% on short-time deposits and 4½% on long-time deposits, and 3% on daily credit balances of those who were entitled to draw on open accounts (or commercial account, as we would say). Borrowers were charged interest at 4½ and 4¾%; and presumably the same rate on overdrafts on commercial account—the limit of each man's credit in that line being previously determined by his directors. The business was mostly short-term loans, as is the way with Raiffeisen banks generally. When he was unfortunate enough to have idle money, he placed it in a real bank in a nearby city, but the trick of the business was evidently to make all the money work, and he probably had a waiting list of approved borrowers whom he could summon with a dinner-horn when there was anything on the table. His accounts were mostly small, of course, and his business was apparently done by personal contact, for we saw no sign of "checks." If a man needed a few cents or a few dollars, he apparently went to the bank after it—just as he went to the store after a nickel's worth of salt fish if he needed a delicacy to serve with his potatoes and curds when his eldest daughter's young man was asked to stay to dinner. The manifest effect of it all was to reveal to every peasant the conception of money as a useful commodity of his daily life and action, and not as a thing to be gazed at through the plate-glass of a bank window. conception helps him to save money and to money in his regular business, just as he saved and used manure, without which his tired land would not produce anything. Connected with this also is his new conception of the earning power of money and his stimulated desire to have it work with him as well as he with it. His coins run down to one-quarter of a cent in value, so he has a visible expression of the interest which even a small amount of deposited money can accumulate in a few days or weeks, and a visible warning also that a loan can take something bright and hard out of his pocket if he does not choke it off as soon as possible. Both conceptions combine to make a man a good saver and a wise borrower, and this is really fundamental in the newer and more prosperous life of the European peasantry. All this is quite in contrast with the American notion that a bank is not a thing of the people, but a thing against the people. When our people learn that a bank is really the best and most serviceable working tool of all industries, they will insist that banks shall be properly established and operated for the good of all the people. But this is a homily into which we have dropped, accidentally as it were, and we desist.

Lest some one may think that calculating interest in such an infinitesimal way would be practically impossible with such simple people as our friend of the back-parlor bank, we must mention the fact that interest tables which they all have make the computation easy, because they are carried to very short durations and very small principal sums—possibly shorter and smaller than ordinary interest tables contemplate, but no more difficult. The peasant banker can calculate what interest his neighbor has gained or lost while eating his lunch, just as easily as a great banker can determine what his client gains or loses in going around the world. It may seem to be very small business, but the effect of it all is very great.

The Real Basis of European Agricultural Credit.

We have gone into the material and method of these little banks because the thousands of such institutions in Italy, Hungary, Austria, Germany, and we do not at the moment know how much farther they prevail, are the real basis of agricultural credit in southern and central Europe. They were made in Germany and bear the name Raiffeisen because a man of that name made the first one, more than 60 years ago, to protect his village friends against the loan sharks. Raiffeisen was a zealot—so full of the milk of human kindness that he had to bank it up and teach his neighbors to swim in it. His success demonstrated two things, at least: first, that honest people can protect themselves against exactions and oppression by coming together in a very simple way and agreeing to stand together—one for all and all for one, as has been remarked. The demonstration of this simple fact led to manifestations of power and ability of which Raiffeisen probably never dreamed—namely, that people who can make their whole community financially sound and industrially prosperous by pooling their savings and lending to each other, can go much farther and can secure their proper profit from production by buying supplies for each other and by selling products for each other. The outcome of the whole matter is the fact that agricultural producers in most if not all European countries are financing and doing business for themselves. It is, of course, true, as we have previously tried to show, that financing farmers and farmers' organizations for purchase and sale has become a prevailing mode with governments, with old-line

financial banks and trust companies, and that new lines of accumulated capital are being laid out to extend such operations. All these, so far as we can now discern, find a basis in what the people can do for themselves as demonstrated by the Raiffeisen methods. But though Raiffeisenism has a secret of wonderfully advancing agricultural achievement and prosperity, it is not all of it, and we are convinced that under different social conditions it may have no relation whatever to such progress and development. We doubt its practicability and applicability to American conditions, and least of all, perhaps, to California conditions—but that is anticipating a conclusion which possibly we may not reach at all, and therefore not to be insisted upon at this time.

Lubin at the Raiffeisen Monument.

Not closely connected with the foregoing, either in point of time or geography, was an incident which has, however, a close subject-relation. After several weeks of seeing and thinking and talking about the development of agricultural methods of credit and co-operation in Europe, we came to the town of Coblentz, on the Rhine, and, as near that city, in the small town of Neuwied, was the old home of Raiffeisen and the scene of his labors, a pilgrimage was made to that place and a wreath of laurel and American colors was attached to his monument. This monument of polished granite is surmounted by a full figure of the man above life size, and the sides of the monument carry suitable inscriptions and medallions. The monument stands beside the building which is now used for the purposes of a wide propaganda of agricultural organization on the Raiffeisen plan and is maintained by the central association of these institutions. A fitting tribute was paid to the work and worth of Raiffeisen by David Lubin of California, who, as our readers already fully know, is the father of the International Institute of Agriculture and a leader in its chief work thus far, the proclamation of the achievements of co-operation in Europe as a lesson to the world. Mr. Lubin forcibly presented the scope and importance of Raiffeisen's life and work, and the fact that honor to his memory is a service to mankind. Naturally, the devotion of a throng of Americans to the memory of their townsman of the last generation was a matter of much interest in the quiet little town beside the Rhine.

Frosted Nursery Stock.

[Written for the PACIFIC RURAL PRESS by Prof. ELMORE CHASE, Fairoaks.]

(There has been a good deal said about the pruning of frosted citrus trees this year, but a rather new light of frost injury to citrus is given here by Prof Elmore Chase of Fairoaks in a talk on nursery stock. In certain respects it is one of the most interesting and valuable subjects connected with the whole matter of frost injury and is greatly appreciated.—EDITOR.]

This season, not yet quite closed, has been a very difficult one in handling nursery stock, especially citrus stock, for the purpose of planting. The difficulty lies chiefly in selecting trees from frosted sections. Carload lots have arrived from certain sections of southern California nurseries and very few trees have failed to make good growth when planted. From almost the same sections shipments have been made and on the arrival of the stock careful inspection failed to discover frost injuries that showed any indication that the trees would not thrive as usual in the new orchard; but immediately after planting the trees would begin to die at the top and in a very short time every tree would either be dead to the bud or so far from showing vigor as to be worthless. The trees gave evidence of frost injury, but the renewed growth while in the nursery row seemed to show that the cell activity, the metabolism of the plant, was in full activity, and that appearance, no doubt was not a false one.

The explanation is clear: The frost season this year was so prolonged and so severe, that all trees in these localities which escaped being killed out right had their vitality so lowered, that while they stood in the nursery row where the root system was well established they were able to show life in nearly every part of the tree, yet could not endure the ordeal of being removed from the nursery row, balled, scrubbed, dipped, cut back, defoliated, shipped, and then endure a long passage before being handled again from the car to the new planting grounds and planted under new conditions of soil and climate and thus began dying before planted.

Often such shipments were carefully planted in nursery rows and well watered for a month before planted in the field so that the trees not able to grow would reveal the effect by dying at once. From 10 to 40 per cent have died. When this death has occurred in the trees without this delay in planting, it has left an orchard in a very bad shape, unless before another season comes, the vacant places can be filled with first-class trees.

Nurserymen all are fair and ready to do all they can to save the customer from loss. The proposition to make a very careful selection from the same class of trees and send them free of all charges to replace the dead ones, does not always make good and generally is not accepted. The fear is that though this later selection will probably eliminate all the weaker trees, it is feared that the growth of these trees last planted will be of such a character, not being hardened, or matured so that coupled with the fact that the tree itself has had its vitality lowered, should the coming season be severe, that these later planted trees will not have as good a chance to survive as those first planted and growing. It is a very interesting feature to note how the sixty per cent of these trees leaf out and hasten to make good. Leaves form rapidly, covering the stem from below the bud to the end of the cut back branch. It would naturally seem that any tree that grows thus vigorously from July first to the dormant period which in this locality is about December would have ample time to mature all the new growth. There is in every well cultivated orchard a new growth made in November and December. This is often touched with frost in usual seasons of lower temperatures.

Some nurserymen cancelled all their orders, and have all their stock in the nursery row making good for the next season.

A tree on a three year old root starting just above the bud will make in one season a fine tree for planting.

HIMALAYA BERRIES COMMERCIALLY.

To the Editor: I notice in the PRESS a statement that Himalaya berries have not proved a commercial success in California and are not advised for commercial planting in competition with the Mammoth. Where the Himalaya berry has been introduced in the east it is more highly recommended than the Mammoth. Is this because it is more hardy? Why is it that the Himalaya berry is not commercially as valuable as the Mammoth in California?—J. A., Alameda.

We would hardly say that the Himalaya berry had not proved a commercial success in California because it has not been thoroughly tried out. It at least has not gotten a firm foothold commercially, though a few get into the market and as we see that in the East and Northwest this variety is commended commercially, possibly it also has a good future before it here. Just why it is more highly commended than the Mammoth in the East we do not know. The greatest reason why the Himalaya has not advanced more rapidly in California is very probably that the Californian don't want to bother with a lot of trellis work. That means lots of hand labor and interference with cultivation. The Himalaya in good California soil will run over all out doors and make lots of pruning and bother. The Mammoth will stay in place and the shorter canes will need less cutting back and fooling with generally. Without any accurate data on the comparative bearing under commercial conditions would judge from the nature of the varieties that the Mammoth with its large berries and abundant blossoms and fruits would outyield by the acre the Himalaya with its smaller fruit and larger growth. The picking also is easier and less extended through a season. The Himalaya is a most attractive berry for the home yard in habits of growth and otherwise, but suitability for the home yard may mean unsuitability for field conditions. Perhaps the Himalaya may yet become a great berry commercially, but other established berries are keeping their lead over it without much trouble now.

SOUR SAP.

To the Editor: Would you kindly tell through your paper the trouble with many apricot trees in this valley? A tree will wither and die in a very short time—say three or four days, and affected trees will be scattered here and there in the orchards. The bark on the trunk of the tree becomes a very dark, reddish brown and very glossy, with sap oozing out in places and forming hard balls. Some have called it sour sap, and it has been said that splitting the bark will prove a remedy. The tree will seem to be perfectly healthy in every way, also the roots—then suddenly it will die.

I will appreciate very much any information you can give me.—E. B., Hemet.

These are typical symptoms of sour sap. The trouble is due to climatic conditions, the trees having good growing weather to develop a fine flow of sap, followed by cold weather which stops that flow suddenly and lets the sap stagnate, or ferment. It is most frequent in early stages of growth, that is, the spring, but can occur at any season that there is a lot of sap in the tree. It has been worse this year than usual. Whether trees are hurt or not depends whether the fermentation starts or not. The uninjured trees through less sap or less set back are able to survive the change of weather without having the sap spoil; the others are not. It is hard to prevent, hard to cure, and a person would do wrong to give any encouraging advice. Splitting the bark is thought by some to do a little good in letting out the gas formed in fermentation, thus protecting the growing tissue. It very probably does no harm and on a chance it can be held better to split the bark than to do nothing.

Affected trees can be pruned back to healthy wood if there is enough remaining to make a new top. The affected wood would die anyway and take the other with it. However, no treatment can be said to be very satisfactory.

CONTROL OF PEAR SLUG.

To the Editor: I am sending, under separate cover, some samples of cherry tree leaves that have been attacked by a small snail or slug. I first noticed that the tender shoots were acting as if they were affected with peach tree curl leaf. Later the lower leaves seemed to have the green portion of the leaf sucked out. On examination I found a great number of these worms, varying from a quarter to half an inch in length, greenish in color, and with soft, semi-transparent bodies. Kindly let me know what they are, and how to rid the trees of them. You may find some of the worms still on the leaves.—J. L. D., Cotati.

The sample has not yet arrived, but there is no need to wait for it. The creatures you speak of are the pear slugs, or the cherry slugs, as they are sometimes known. Although slimy, like the big yellow slug that is a pest in vegetable gardens, it is no relation thereto, but is the larva of an insect of the same group as the butterflies and moths. Its olive green color, slimy appearance and the way it eats the surface of the leaves make it about the easiest of all insects to identify. Parasites and predacious insects usually keep it in fair control. Whenever artificial methods of control are needed the slugs can easily be destroyed by any of the soap or emulsion sprays, or by sprinkling dust of any kind upon them. If you can get a machine for sulphuring a vineyard and use some air slaked lime or other fine dust, it will fix them quickly and inexpensively, though any way of applying dust will do.

Potato Breeding in Europe.

To the Editor: In line with the excellent suggestions made by your correspondent in the issue of June 28th, I will add that while abroad I made a special study of potato culture, and found one large seed firm in England growing no less than 500 varieties, having at one time exhibited that number. In the Potato Experimental Department were many rooms with the floors all covered with seed for testing, and exposed to full light, arranged in shallow trays.

All advanced and progressive growers there plant seed with strong, dark green sprouts, two to three inches long; the potatoes are of small to medium size, and are always planted whole. Much more room is left in the row, and rows are wider apart than used to be the custom.

Potatoes for seed are always grown in the north, mostly in Scotland, and for seed purposes are used rather green. There are many other details incidental to potato planting, but I mention this merely to corroborate what Mr. Kirkman said.

I would have liked to have introduced some of the new varieties I found, but the recent Federal law is prohibitive. I cannot but think, however, that an amendment to the Act would be very useful, in permitting the importation of new varieties of potatoes for testing only, the same being sent to, and in the charge of some Government Experiment Station until ready to distribute. No crop deteriorates or "runs out" sooner than the potato; new blood is needed constantly, and we lose a good deal in not being able to reap a benefit from the experiments of others.

Hundreds of new crosses are being made, and with species of solanium from any parts of the globe where they are found to grow.

I noticed a great many varieties of colored potatoes (not black) in all shades from pink to deep claret. The latter was almost perfected as a salad potato, of the same color as blood beet.—Morgan Hill. LEONARD COATES.

(This is but one of the very interesting and valuable things that Mr. Coates has searched out during the long visit in Europe from which he has recently returned. We expect to have the account of some other observations later, and the more that we can have the better. It is unnecessary to say anything further of the benefit that might be obtained if we could take advantage of these potato experiments. That fact is clear enough as it stands.)

SOIL FOR ALFALFA.

To the Editor: Can you tell me the kind of soils that alfalfa will not do well on? I have a piece of land which I wish to plant to alfalfa, that has a heavy reddish clay down the first foot and below that the subsoil is a sandy clay. A hardpan underlays the piece at a depth of from 1 to 3 feet. If the hardpan is broken up, will alfalfa do well with the clay soil above?—J. C., Marysville.

The kind of soils that alfalfa will not do well on are soils with poor drainage, those in which the irrigating water will stand and rot the roots. A good, deep soil, one into which the water will move readily is the kind of soil for alfalfa. The deeper the better, and naturally the richer the better also. Good stands of alfalfa have been secured on everything from the lightest kind of sand to genuine adobe, though the richer the soil the better, and it is hard to get a good stand on real heavy soil. Fairly good stands of alfalfa have been secured on that red, foothill type of soil which you evidently refer to, though it is not real alfalfa soil. Your success would depend upon the way water could get into the sandy clay. If it could move into it as freely as into the top soil, alfalfa would grow; if it would hold it up too long, probably it would not. Breaking a hardpan by blasting will make land as good as if the hardpan were not there, provided it is a genuine hardpan and there is a subsoil that the alfalfa roots can penetrate. Blasting into a heavy subsoil, often called a hardpan, may break it up to give alfalfa roots plenty of room to grow. If by blasting or otherwise you can give alfalfa roots three feet of soil you can do something with it. Some kinds of red foothill hardpan, by the way, will disintegrate without blasting if there is enough soil above them to get roots established and to keep moist. Your soil possibly will be greatly improved by giving an application with hydrated lime, and if rather barren naturally, will probably be better if inocculated with alfalfa bacteria.

RIPE MELONS—TOMATO BLOOM.

To the Editor: Can you give me any sure rule to tell when a watermelon is fully ripe? What is the method used by growers in picking for commercial shipping?

I see one querist asks about tomato blossoms dropping with setting fruit. I have been experimenting for that same thing, and find that by trimming up the vine and staking it, the fruit sets much more readily.—J. A. M., Foxen, Cal.

The sure rule that boys use when they get into a melon patch is to gently press the sides of a melon and if it crackles a little bit they judge it fit to eat. If it makes no sound they go to another. Commercial pickers, we believe, look at the little spiral between the melon and the nearest leaf. If it is withered they pick the melon, if fresh, wait until next picking. If there is another and better rule we hope some melon grower will tell about it, as some people are much better able to judge the quality of a melon than others. Thanks for the tomato information.

BLISTER MITE ON WALNUT.

To the Editor: I am sending you some walnut leaves with some swellings on them. They are very plentiful on some trees here. Is the trouble serious and will it spread?—H. B., Burlingame.

This is merely Erinose, or Blister Mite, which is a very common trouble on walnuts, but does not do enough damage to really justify the term "trouble." The University Bulletin on Walnut Culture, for example, has this to say: "Its effects are seen in the form of blister like swellings or elevations on the leaf surface, which are convex on the upper and concave on the lower side of the leaf. These swellings are caused by numerous, very small insects which live within the blisters on the under side of the leaf amongst a felt-like, hairy growth which develops there. While this effect is very common, it produces no appreciable injury and needs no treatment for its control."

TROUBLES OF BEAN LEAVES.

To the Editor: I am enclosing leaves of Kentucky Wonder bean vines. I would like to know what to do for bean vines affected like these leaves are?—W. B. C., Volta.

The bean leaves were rather dry to show well what was the matter with them. However, there were a few aphids on them, also indications that the red spider had been doing damage. It seems likewise that the mildew, to which this variety of bean is very susceptible, has also been doing considerable injury. If the green leaves show a white fungus growth, this will be your main trouble in all probability. It can be controlled by sprinkling with dry sulphur, which will also destroy the spider.

QUESTIONS ON FLORICULTURE.

To the Editor: Would you please tell me if you publish a book on flowers similar to your books on fruits and vegetables which we have, and in which we find valuable information. Now what I want is a book on flowers as complete as your other books. If you do not publish one, could you recommend one to me? Could you please tell me how to germinate Antigenon Leptopus (Rose De Montana)? Also are Japanese Mammoth chestnuts good to eat?—Mrs. W. A. G., Los Angeles.

The Japanese chestnut is not greatly different from other chestnuts, and is found in the markets along side of the other kinds. Presumably this is the "Mammoth" chestnuts, for it is much larger than most kinds. We do not publish a book on floriculture, and wrote to MacRorie-McLaren Company for their recommendations on the subject also to answer the other question and received the following reply:

"The only book which we associate ourselves with is "Landscape Gardening in California" by John McLaren. Regarding the germination of Antigenon Leptopus seed, beg to state that same should be planted in light fibrous loam and receive bottom heat.

VARIETIES OF SHIPPING FIGS.

To the Editor: What figs can you recommend of special excellence for table use that are early, bear two crops per year, keep well enough to ship several hundred miles, that will be liked by people after shipment?—H. T. W., Del Rio, Texas.

Answer by Tribble Nursery Co., Elk Grove.

We believe the California Black or Mission fig is the only fig that meets with all requirements named. It has two heavy crops, is early, of the best quality, and it has been successfully shipped to Eastern markets with refrigeration. The White Adriatic is a splendid fig in some localities, but owing to summer rains at Del Rio it would sour on the tree, which it has a habit of doing in California, in some localities. The two best preserving figs, or among the best, are the White Endich and the Brown Ischia, though these varieties produce but one crop that is good, the first not being of value. It is usually conceded that the Smyrna varieties are the best figs for drying, and are excellent to ship under refrigeration, but the caprification of the Mission and others of this type will probably prove this erroneous. We understand that the Celeste and Magnolia figs have been found to do as well or better than other varieties, which have been tried in Texas. In addition to the above mentioned varieties, there are many fine varieties, such as the Pastilliere, Kadota, San Pedro White, Ronde Noir, etc.

TO KILL BERMUDA GRASS.

To the Editor: Enclosed sample of grass has lately appeared on my pasture. As I know nothing about it, I am sending you a slip to see what it is and whether it is poisonous or not. I shall be very thankful if you will inform me about said grass.—A. B., Tracy.

This is Bermuda grass, one of the worst weeds in the State, taking hold of the richest lands, especially bottom lands where moisture is plentiful. At each of the joints roots can start, if covered, and the grass spreads greatly in this way. It is not poisonous, but fairly decent pasture. In some places—not in California, however—it is highly thought of. In California any good it might be would be more than offset by the injury it would do, and soil satisfactory for it would be of far higher value for other purposes, except in alkali soils in rare instances. Bermuda grass is considered practically impossible to eradicate. However, it is reported that by plowing up ground in summer, leaving it rough and open to the air and letting it dry out completely, the hot summer sun will destroy all of the roots. Would advise nipping a new infestation in the bud in this way on the chance of success. Sometimes a second plowing is needed, also a harrowing to uncover roots protected by clods. In an alfalfa patch, if the alfalfa is well cared for, it will hold its own against the grass.

SWEET POTATO GROWING.

To the Editor: Would you kindly give me some information as to the profits derived from the culture of the sweet potato in soil suitable for its growth, also the latest and best methods of raising same?—Subscriber, San Jose.

Details on sweet potato growing can be found in California Vegetables, by Prof. Wickson. There was also an account of the methods followed at Atwater, Merced county, in the issue of April 27, 1912. If you intend to make a business of sweet potato growing you should study the methods at first hand at Atwater or some other point in the district, the main district in California. It is too risky to state what profits are as generalizations on profits are too misleading in all cases. Sweet potatoes are a very profitable crop for the man on the right soil who attends strictly to business. The other fellow will not succeed under any conditions.

Some Italian Agricultural Methods.

[Written for the PACIFIC RURAL PRESS by E. J. NEWCOMER.]

Italy is pre-eminently an agricultural country as regards natural resources. It is mountainous, but has few minerals of value, and its inhabitants have been forced to cultivate the land in spite of its frequently unsuitable condition.

Stretching transversely across the broad northern part of Italy is an extensive plain, 200 miles long, and with an average width of 50 miles, dividing the Alps from the Apennines. This plain is intersected by numerous streams, most of them finally flowing into one of the two large rivers, the Po or the Adige, and is extremely fertile, although frequently swampy. South of this plain are the Apennines and their spurs, occupying practically the whole of the peninsula, the part familiarly known as the "boot," and in these hills and mountains there are numerous narrow valleys, as well as several small plains. But for all this level land, the great population, which is 20 times that of California per square mile, makes it necessary to cultivate not only the valleys and rolling hills, but also the mountains wherever there is any soil at all.

This necessity has brought into existence many interesting methods which are entirely novel to the Californian, and which serve well to illustrate what may be done by intensive agriculture. I will describe first briefly the general methods of farming in use, and those used in cultivating the level land, and then tell in greater detail of the more interesting methods employed in mountainous districts.

Two very general conditions which hinder agricultural progress with the Italian are the non-ownership by the farmer of the land which he works, and his non-residence upon it. The land is largely owned by wealthy men who divide it up, and, through their agents, rent it to the peasant farmers, each farmer taking only as much land as he and his family can cultivate. The farmers live mostly in the towns and villages, going out in the morning to work the land, and returning at night, and it is a common thing, when traveling by rail, to pass literally hundreds of small, cultivated patches of land without a house on any of them. For these reasons the peasant is not vitally interested in the land, and as a rule his limited education does not allow him to successfully use modern scientific farming methods. At the same time, the owner of the land, the educated man, has nothing to do with farming it.

Even on the extensive level plains the fields are small, usually not over 10 or 15 acres in extent. Each field, ordinarily an oblong strip of land, is bounded by a road or path, or by one of the numerous irrigation or drainage ditches which ramify to all parts of the valley. There are frequently willow or poplar trees growing along these ditches, pruned and trained to form living supports for the grape vines which almost invariably form a sort of fence about the field. Under these conditions it is easy to see that machinery, such as large cultivators, mowers or harvesters is very much out of place. In some localities I have seen modern plows hitched behind slow-moving oxen. Most of the work is hand work, however, and every able man in the family works in the field, and usually the women also.

The great northern valley is too cold for citrus fruits, and even for olives, and is largely devoted to grapes and to various field crops, such as grain, hay, rice, and vegetables. Fruits are raised chiefly in small quantities, a tree here and there, and even when a man does possess an orchard, he raises hay or grain between the trees. A great deal of labor and care is bestowed upon the crop: it is carefully weeded by hand, and even grain fields are watched as carefully as vegetable gardens.

It is in the more southern, mountainous districts that one finds the farmer literally fighting for a living from the soil. There are acres and acres of land here that are cultivated only with a great deal of labor and trouble. The very steep hillsides have been under cultivation for hundreds of years, being built up with strong stone walls into successive terraces, each terrace 10 or 12 feet high. It is no uncommon thing to see 60 or more of these terraces rising one above the other from the sea to a height of nearly a thousand feet. The amount of work necessary to construct these terraces, and the continual labor of climbing up and down to cultivate them, and to harvest their crops is almost incredible. There are only narrow, rough paths on these hills, and frequently the land is so steep that stone stairways have been built.

Every inch of this terraced land is cultivated, and a great variety of crops is raised upon it. Much of it is devoted to oranges and lemons, which are usually trained low and covered across the top and on the exposed sides with the branches and leaves of oak or chestnut, supported by a light wooden framework. This protection is necessary on account of the hard winds and severe hailstorms which sometimes occur in the region, particularly along the sea coast. Vines are very extensively raised on the terraces also. They are always trained on frames formed of vertical and horizontal poles fastened together with cords or wires, and strong enough to support a man. For the grower must make his way about, barefooted, over these trellises, in order to pinch off superfluous shoots, or to spray the vines with Bordeaux mixture against the dreaded Peronospora, or grape mildew. An enormous amount of labor is expended each year in pruning and training the vines.

The larger shoots are trained up vertically, and the smaller ones horizontally, and if these latter are not long enough to reach from one pole to the next, a piece of dead vine is tied to them and carried across to the next pole.

All the tying is done with flexible green willow and poplar shoots. The ground about the vines, as well as that used for other crops, is all cultivated by hand, ordinarily a large, heavy mattock being used which breaks up the soil to the depth of a foot or more.

Grain and even hay is grown on some of the terraces, but a far larger number of them are devoted to vegetables, and the land is continuously used from early spring until fall. Potatoes are one of the earliest crops planted and these are dug about the end of March. They are very small at this time, not larger than ordinary plums, but it is necessary to dig them early, before they are ruined by the black rot, a terrible fungous disease that we do not know in America. Bordeaux mixture is sprayed on the vines as a preventive of this disease, but it has little effect, and if the potatoes are not dug early, the vines will wilt and turn yellow, and the potatoes themselves will blacken and rot. A further reason for digging them early is that there is a great demand for new potatoes in the more northern countries, particularly Germany, and the farmers sell their product at a good price by shipping it north. Sometimes, if the rot is not particularly serious, a second crop of potatoes is planted as soon as the first is out of the ground, but usually something else is put in, such as corn and beans, carrots, fennel, etc. Many

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vegetables, too, as artichokes, cauliflower, broccoli, and fennel are planted earlier. When the potato crop is dug, no time is lost in getting another crop started. The ground is gone over with a heavy hoe, and levelled. Then one man makes a shallow trench with the hoe, while another scatters the seed. If it is beans, the first man usually goes along the row and puts in a kernel of corn at intervals, as well. When the seed has been placed he takes the hoe and digs a second trench parallel with the first, the dirt from it falling into and filling the first trench.

This process is repeated until every available inch of the terrace has been planted.

The terraces are usually shaded by olive or carob trees, planted around their margins and these trees are also planted in any place where the soil is not good, as they will grow in spite of poor, dry soil.

The carob tree is a rather large tree, shaped something like a live oak, and with heavy dark green foliage. It bears elongated green pods, looking like string beans which broaden and turn brown as they ripen.

These pods form a valuable fattening food for stock of all kinds. Fig and almond trees also are common, and occasionally one sees apples, peaches, pears or walnuts. But aside from the citrus fruits, and sometimes almonds, trees are not cultivated extensively in the mountainous regions.

The grain crops of Glenn and Butte counties are now being harvested and the yield is proving to be much better than expected. Also in the Wheatland, Yuba county, section there is being harvested good crops of hay and grain. C. H. Dam is reported to have finished putting up 1800 tons of hay and he expects to harvest 15,000 sacks of grain this season.

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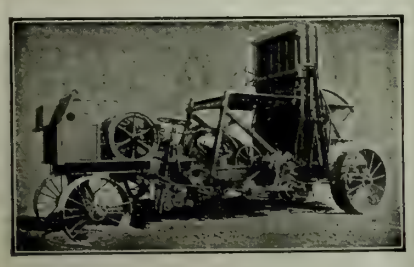

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AGRICULTURAL REVIEW.

Agricultural Notes.

The prospects for a record breaking beet crop around the Hamilton, Glenn county, sugar mill are fine. The mill expects that six months will be required to work up all the beets contracted for.

The large amount of irrigation done in the vicinity of Live Oak has made it possible to grow a vast amount of garden truck. The yield of all kinds of vegetables this season in that section has made prosperous times for the community

A dispatch from New Pine Creek, Oregon, states that M. R. Crystal of Sebastopol, Sonoma county, California, is in that section for the purpose of buying 5000 tons of hay, and is offering $9 per ton for good hay delivered at the railroad. The hay is to be shipped to California, where he will dispose of it to farmers and stockmen who have been affected by the dry conditions in that State.

Sonoma county offers a premium of $2 to the boy or girl under 16 years who brings in the largest number of gopher scalps during the month of July.

The first carload of watermelons for the season was shipped from Sultana, Fresno county, last week. The crop in that section is up to the average and growers anticipate fair prices, as the first car sold for $20 per ton. Dinuba is also shipping melons, but reports a rather short crop.

One of the heaviest yields of barley for this season in Sutter county is reported by William Hageman, who averaged 35 sacks to the acre on his 90-acre field west of Live Oak.

The hop crop in the vicinity of Chico is reported to promise a full yield this season. Picking is expected to begin in August.

Alfalfa planting in summer is being tried out on the 480-acre tract of the Midland Investment Company near Tulare. First a nurse crop is sown and then the alfalfa seed was drilled in deep and the ground rolled. After a few days the alfalfa made a fine showing above ground.

Land Improvement.

A meeting was held last week and a movement inaugurated to reclaim 50,000 acres of swamp lands near Klamath Falls, Oregon.

A tract of 100 acres was sold in the Ukiah valley last week for $250 per acre. Part of the land is already planted to hops and the new owner will set the rest of the place to the same crop.

A new system of irrigation pipes is being installed by E. W. Stanton, who owns the old McGrew place, north of Live Oak. Stanton is an engineer and has laid out detailed plans to irrigate the whole 240 acres from a system of underground concrete pipes. The water is supplied from three wells, a 35-horsepower electric motor being used for power. About three miles of 18 and 14-inch pipe are required to conduct the water to the various fields. Part of the ranch is in alfalfa and part in orchard.

What ranks as one of the largest real estate deals in the history of the Porterville district was completed last week when the property known as the Henderson orchard in Worth was sold to William Ford, George Ford and Harold Ford, Indiana bankers, for a consideration said to have been approximately $230,000. This orchard, which was planted ten years ago by Dr. Henderson, includes 45 acres of early navels and forty-five of late valencias, all in full bearing. In addition there are tracts of land excellently adapted to oranges, and totalling nearly 100 acres of bare land.

(*Continued on Page 34.*)

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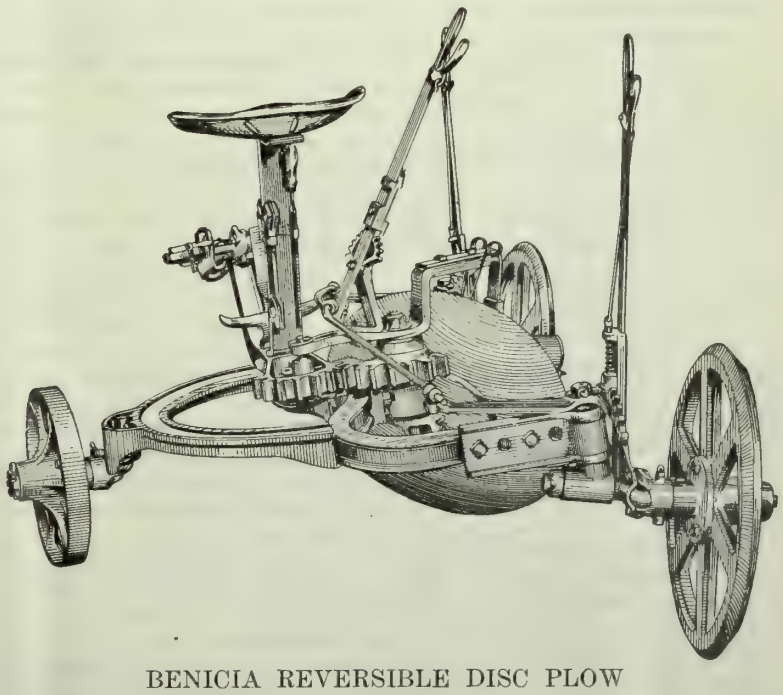

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Pruning Frosted Citrus Trees.

[Written for the PACIFIC RURAL PRESS by PROF. J. ELIOT COIT.]

(We have carried on quite an extensive discussion this year on the proper pruning of frost injured citrus trees and the following from a circular of the College of Agriculture, just issued, will give the decisions reached on this subject at the University after careful investigation.)

It has previously been pointed out by this Station that it is wise to defer pruning frost injured trees until it is perfectly clear just how far back the wood has been killed. After the line of demarcation between living and dead wood becomes apparent, no time should be lost in taking the necessary steps toward reconstructing the top in the best way with the least possible loss of time.

The problems involved in mending and reforming the tops of frosted citrus trees fall naturally into two classes, viz., those having to do with very young trees and those concerned with large mature trees.

REHEADING YOUNG TREES.—When a one or two-year-old tree has been killed to a point near the ground it should first be determined in each individual case whether the dead wood extends below the bud union. If there remains enough live wood above the union to grow a strong shoot, such a shoot may be allowed to grow and become the trunk of the new tree, all other shoots being suppressed. If on the other hand the trunk is killed below the union it will be necessary to set a new bud. The opportunity is thus presented of reconsidering the relative profits to be derived from oranges, lemons or pomelos. In case the root is sweet orange the bud may be set immediately, provided there is sufficient room to do so without excavating the soil, for in no case should a bud be set below the soil. In case the trees have been killed to the ground it is well to select the most vigorous sprout and bud into this two or three inches above the ground. If the root is sour orange or pomelo it is best to place the bud six or eight inches from the ground on a strong sprout. This will result in a somewhat hardier tree and one more resistant to gum disease.

In all cases where a new trunk must be grown on trees already planted in orchard form, it is necessary of course to stake the trees and tie them every few inches, taking care to disbud often and remove all sprouts from the root, eventually heading the tree at the desired height. A stake larger than the customary building lath is advisable in order to prevent injury by passing teams and tillage tools.

TOP PRUNING.—Where the tops of young trees are partly frozen it will be found, especially with lemons, that the more rapid growing upright shoots have been killed while the fine fruiting brush has been spared. Instead of cutting back all of these injured shoots in proportion to the injury, it is much better, especially with lemons, to take out most of the very strong upright canes entirely. If all are merely cut back and allowed to remain each one will throw up several similar shoots which in turn may be cut back, the final result being a broom-like growth with far too many shoots. The proper pinching and thinning of such a multiplicity of shoots will involve much more labor than the commercial orchardist can afford. It is better, therefore, to remove most of the upright vegetative shoots entirely and rely on new shoots from the horizontal wood to enlarge the framework of the top. All water sprouts arising from the trunk and around the crotches should be vigorously suppressed. It is a good plan to whitewash the exposed trunks in order to prevent sunburning of the bark.

In many cases the bark of the trunks of young trees has been split by the frost and has dried out resulting in a strip of dead bark on one side, usually the southwest side. This condition is not necessarily serious, provided there remains a strip of live healthy bark of sufficient width to provide a flow of sap to the top. The living bark will gradually increase in width and extend over the dead areas, in time covering them entirely. In order to prevent the entrance of wood decaying fungi it is well to paint the dead areas with white lead or asphalt paint.

REHEADING MATURE TREES. — Orange trees are much more resistant to frost than lemon trees. Over certain large areas the recent freeze has ruined the fruit and completely defoilated the trees without killing back the wood to any appreciable extent. In such a case the trees need no extra pruning, although while the leaves are absent a good opportunity presents itself to remove conflicting branches and thin the brush with greater ease and efficiency than is possible when the trees are covered with leaves.

Where the wood is killed back to any extent, however, too many shoots are apt to start from the live wood and many suckers from about the crotches. Theoretically the shoots should be thinned out, leaving only what is needed. Those left will be stronger and bear more fruit than if such a large number were allowed to struggle for life. Practically, however, such a course would require more labor than is available and large growers will have to adopt the next best course, viz., that of cutting out all the dead wood and thinning the new growth by taking out bodily a certain number of branches.

Where lemon trees have been killed

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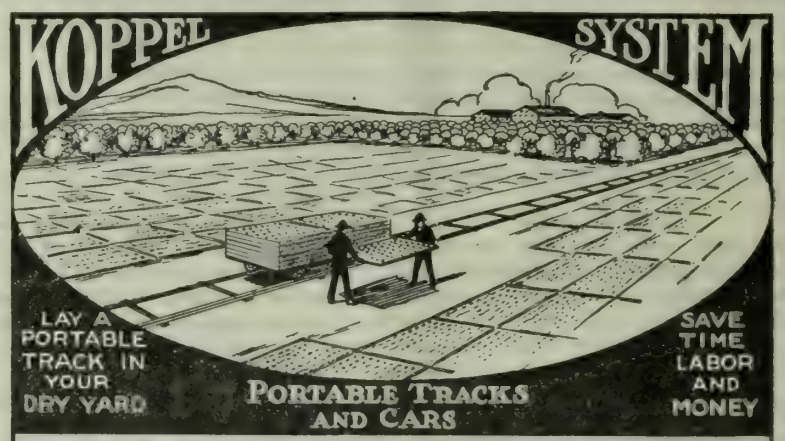

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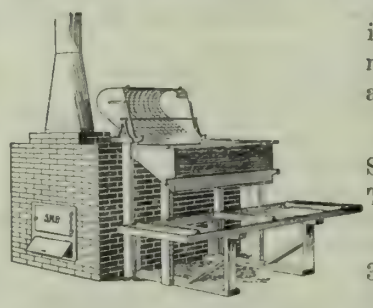

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345 S. Main St., Los Angeles, Cal.

back severely it is best to withhold or decrease the fertilizer during the succeeding year in order that a more moderate growth may take place. Frozen trees have been thrown out of balance. They have the same amount of root as before which is now pouring sap into a much reduced top. The result is bound to be a tremendous new growth breaking out all over the trunk and branches. At best a great deal of labor will be required to properly sucker the trees. If additional stimulation is brought about by the application of quick acting fertilizers this trouble will be increased. Wise lemon growers prefer to build the new head out of the more moderate growth of fruiting wood rather than out of water sprouts. It is not necessary or always advisable to root-prune frosted trees, but if hardpan or plow-sole exists it may be broken up with a subsoil plow at this time with less injury to the trees from cutting large roots. The number of roots which may be cut with impunity will of course depend upon the amount the tops of the trees have been killed back.

Whenever large limbs are taken out it is well to apply some good antiseptic to the cut surfaces in order to prevent the entrance of decay organisms and to prevent undue drying out and checking of the wood. White lead paint and asphalt paint are good dressings, while liquid grafting wax is often used. A good formula for the wax is 6 lbs. resin, 1 lb. beeswax, and 1 pint of linseed oil. Another wound dressing which is very cheap and has been highly recommended consists of three parts melted resin mixed with one part warm crude petroleum.

REMOVE ORANGES.—It seems reasonably certain that no injury to the tree can result from any of the materials passing from the frozen oranges back into the tree. An examination of those oranges which have been too badly frozen to be fit for shipment, shows that most of them have been only partially killed; consequently they are presumably respiring carbon dioxide. This loss of energy would be saved if the oranges were removed from the tree rather than allow to hang all summer. There is no experimental evidence, however, to show whether this loss is sufficient to warrant the cost of early removal by hand. In case the fruit is picked off the trees it may safely be plowed under, thus adding humus and some plant food to the soil. There is no danger of the soil becoming acid as a result of this practice.

OVERCHARGING ON EXPRESS.

To the Editor: Last autumn I expressed a crated live pig from Sacramento to Willits. The express agent collected $12.25 from me, when the charges should only have been $4.50, as I found out a few weeks ago. I wrote the company's agent, but can't get a reply. In what way can I make them consider my request for an adjustment? The consignment weighed 200 pounds.—W. E. L., Covelo.

ANSWER BY OUR LOCAL ATTORNEYS.

Your correspondent having written to the express agent regarding the overcharge to which he states he has been subjected and having received no reply, his proper course would be to take the matter up with the express company. He might communicate with the home office stating all facts and circumstances and enclosing exact copies of the way bill and receipt. Such matters are generally given proper attention by the company. If this plan does not yield results, the matter should without delay be placed in the hands of some reputable attorney. In such a case the attorney would desire the following data:

(1) Name of express company; name of agent, if known.

(2) Date of consignment; name and address of consignee.

(3) Receipt, way bill, etc., for inspection. Any other evidence of amount paid.

(4) Reasons for belief that the charges should have been no more than the amount alleged, and evidence thereof.

(5) Copies of letters already written to agent and to company; replies thereto, if any.

WANTED. BLUE BLOODED KITTEN.

To the Editor: I am anxious to obtain a kitten of good stock, for my children. I wish one that is bright, good looking, and a good mouser, and think the kind I wish is called the Maltese. I have searched advertising pages in vain but find no mention of cats. Will you have the kindness to advise me.—Mrs. Olive H. Campbell, Weiser, Idaho.

We have always been under the impression that the majority of people have been more worried over the way to get rid of kittens and cats than to secure new ones, so we can't help our correspondent. This is an opportunity for cat breeders to take advantage of and we hope that the successful kitten, Maltese, Persian, Angora, Tortoise Shell, or what not, will give thorough satisfaction.

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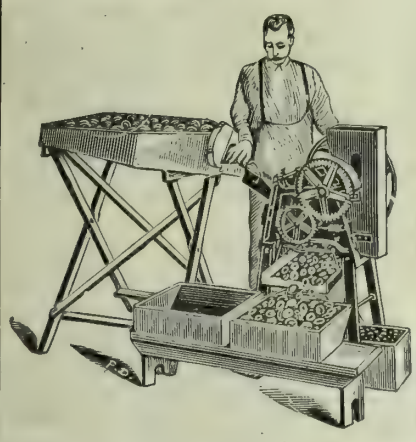

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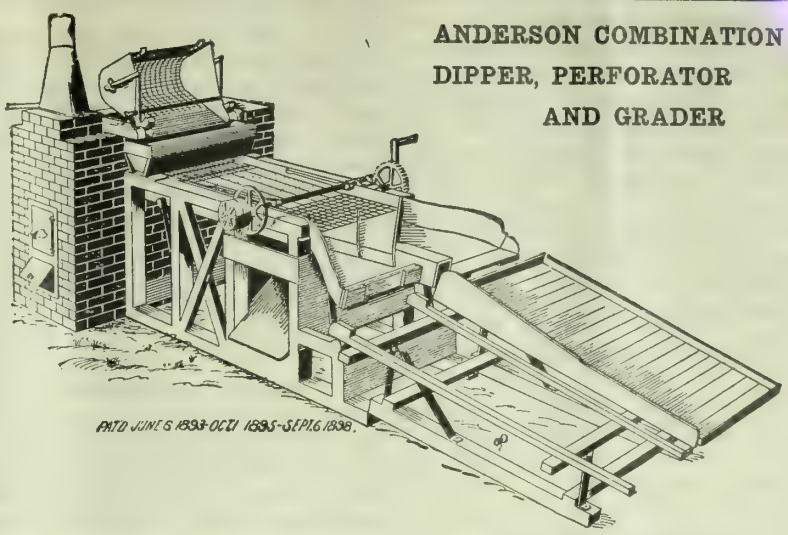

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Agricultural Review.

(*Continued From Page 31.*)

The 40-acre ranch, one-half mile from Fowler, belonging to J. R. Dilley, sold last week to George Baker for $20,000, or $500 per acre. The place is highly improved and has fine buildings, and Mr. Baker will move onto the place right away and make it his home.

Chris H. Widemann of Gonzales, purchaser of the extensive Coburn ranch near King City, is arranging to subdivide and place upon the market about 8000 acres in tracts to suit. About 2500 acres will be bottom land and the balance is upland.

A 240-acre ranch, northeast of Tulare, was sold last week for $30,000. The ranch contains orchards, alfalfa fields and considerable native timber.

With the Fruit Men.

The first shipment of Gravenstein apples for the season was made from Sebastopol last week. Preparations for the big apple show to be held there from August 18 to 23 are going ahead rapidly.

Kings county dried fruit producers are generally signing up on the proposition to join the dried fruit association now being organized at Fresno. A meeting to consider by-laws will be held at the latter city on July 28.

The Sutter Cured Fruit Association of Yuba City has leased a part of the big grain warehouse there and will install a raisin stemmer and other packing machinery.

The Sutter County Farmer says that buyers are paying $35 per ton for Tuscan clings and $22.50 for freestone peaches. The bulk of the crop is being held for $37.50 for choice clings and $25 for freestones.

Last week the California Associated Raisin Company announced the following prices for July, August and September delivery:

Loose Muscatels, 50-lb. boxes.	July.		Aug.		Sept.	
2-crown	3½		3¾		4	
3 and 4-crown	4¼		4½		3½	
Seedless Muscatels	3½		3½		3½	
Seeded Raisins.	16-oz.	12-oz.	16-oz.	12-oz.	16-oz.	12-oz.
Choice	5¼	4⅜	5½	4½	5¾	4¾
Fancy	5¾	4¾	6	4⅞	6¼	5⅛
Sultanas in 50-lb. cases		4½		4½		4½
Thompson Seedless in 50-lb. cases		5¼		5¼		5¼

Sultanas and Thompson, if recleaned, ¼c per pound advance.

Prices on all above guaranteed against its own decline until April 1, 1914.

Commissioner Schulz states that at this time the orange groves of Tulare county promise 65% of a normal crop the coming season. Trees not injured by frost will have a full crop, while frosted trees will have much less than normal.

The big cannery at Yuba City expects to open for the season next week. The biggest pack of peaches ever put up by this concern is expected this summer.

At a meeting of the Lake County Cured Fruit Growers' Association, held at Kelseyville last week, it was decided to build and equip a packing house at that place, to be conducted on the co-operative plan for its members.

The California Cured Fruit Exchange Bulletin of July 7, says that some packers have offered Santa Clara prunes, 60s to 90s, at 3¾c basis f.o.b., October shipment; also that apricots have been sold at 12c f.o.b., or 1c drop; peaches of 1912 crop, choice Muirs, August shipment, at 4½c f.o.b. coast. Very little buying is being done at this time.

The Corning New Era tells of good prices being received for fruit. In its last issue it says: The Corning Olive Growers & Producers' Exchange, recently incorporated and put on a good business basis, has about completed shipments of apricots and Tragedy prunes, and partial returns already received indicate a net price to the grower member of at least $50 per ton for the cots and considerably more for the prunes.

Up to July 8 over 2800 cars of melons had been sent out of California with 700 more to go for the season. About 75 cars of deciduous fruits are now going east daily, consisting principally of plums, pears, peaches and apricots.

A new department has been added to the College of Agriculture, University of California, at Berkeley. This department will take up the study of fruits and will be in charge of Prof. V. B. Pratt, temporarily, though it is stated Prof. A. V. Steubenrauch will soon take it over.

Dairy and Live Stock.

The directors of the Fresno Agricultural Fair Association have passed a resolution asking that a model dairy farm be run in connection with the agricultural department of the Fresno city schools.

Thirty thousand pounds of creamery butter was shipped from Klamath Falls, Oregon, during the month of June.

A dispatch from New Pine Creek, Oregon, states that 300,000 pounds of wool were sold there last week.

The Sutter County Farmer says: The milking of ewes has become quite an industry on the Glide farm near Winters, and this season over 1000 ewes are being milked twice a day and give about a pint of milk each. The milk is poured into large iron vats, where it is heated to a certain temperature; it is then placed in bags and allowed to drip. The cheese is cut up into about 3-pound squares and placed in barrels for shipment. At the present time this firm is making about 350 pounds of cheese daily and they have a ready sale for their product in the bay cities.

Nineteen head of fine, heavy draft horses were purchased in the Salinas section last week for the San Francisco market.

At an auction held near Waukena, Kings county, last week, dairy cows averaged $60 per head. One cow brought $90.

George Wurster and F. Mezger, cattlemen from Yreka, have purchased 303 acres of land near Stripton, Sutter county. They expect to plant most of the land to alfalfa and make a dairy and stock ranch.

Dairy Expert Leaving.

Warren B. Thurston, dairyman of the Department of Agriculture for California, advises us of his appointment to do similar work in Minnesota to that which he has been doing here, and that the work of the Dairy Division here will in the future be done by some one working out from Salt Lake City. Mr. Thurston has been engaged more with creamery than straight dairy work, as was demanded by the duties of his office, but is well known to most dairymen for his work in encouraging the further use of the Babcock test on dairies, in aiding in the production of an improved quality of butter and in improving dairy methods.

State Fair Sale Off.

We have been notified that the first annual consignment sale of live stock that was planned for the coming State Fair has been called off. It was planned to give all facilities for a public sale of such stock, but a hitch seems to have developed in the proceedings. Inasmuch as the stock is the livest part of the Fair, the thing that interests the large majority of those that come for anything but amusement, it is to be hoped that at future Fairs some suitable methods of holding such a sale can be arranged. With an assemblage of fine stock like that at every California State Fair, the value of a good animal for breeding purposes is impressed upon visitors, and the more stockmen that take good animals home with them, the greater advance in live stock quality in California.

Pioneer Seedsman Dead.

The last of the old pioneer seedsmen passed away on Saturday, July 5, when Robert John Trumbull died at his home in San Rafael, aged 76 years. Up to a short time before his death Mr. Trumbull was hale and hearty and carried his years well, though he had retired from active business since the fire in 1906.

Mr. Trumbull was one the pioneer seedsmen of the Coast, he having in the 60's purchased the New York Seed House, which was established in 1852. For a long time the firm was known as Trumbull & Beebe, and later as the Trumbull Seed Company, which is still owned by the family, with headquarters at San Francisco.

Caterpillars Make Hit in Russia.

A very satisfactory tribute to California invention and progress in agricultural lines was recently paid in the Auto Show at St. Petersburg when all the first pize gold medals were awarded to the Holt Caterpillar Gas Tractor, manufactured by the Holt Manufacturing Company, Stockton, California. This was in competition with five German built machines and three other American tractors. The same results were achieved several weeks ago at Tunis, Algeria, and it seems that California methods of getting the right machines for the purposes desired have made a hit the world over.

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Alfalfa and the Draft Horse.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

A gentleman recently asked us why it was that he could obtain information about cattle, hogs, or sheep from a good many sources, but when it came to horses there seemed to be little interest taken in this State.

While it seems strange that such a condition should prevail in a State like ours, when a person stops to consider the horse does perhaps receive less attention than any other farm animal.

By horses it is not meant to infer that we mean non descripts which go under that heading sometimes, but instead those of the draft horse type, for with the present demand both for city and farm use the larger breeds are the ones best suited to make money out of.

Men who have made a study of the horse situation in the east claim that the country demand is more important than the city demand as there is not an eastern State where as much as 45 per cent of the farmers raise horses.

Even taking that figure as an average then, we find that in sections devoted almost entirely to general farming, fifty-five out of every hundred have to buy their horses and in this State those raising horses must be much smaller in numbers owing to the fact that specializing in such crops as oranges, grapes and deciduous fruits is such a common practice here. If one will go into any fruit section of the State and enquire from the different growers where he gets his work horses, he is pretty apt to find that he buys them, because he does not grow any hay, or very little, and does not want the care of raising colts.

Another advantage to horse growers in this State is due to the fact that other States cannot compete in prices providing we raise good horses on account of the freight charges in shipping over the mountains. This then leaves the city markets practically free from outside competition, but this market demands a horse weighing 1,600 pounds or over, so only the well bred horse has any chance of selling for a good price.

That the horse is a necessity both on the farm and in the city is an accepted fact even by the auto truck salesmen who naturally are the horses' worst enemy, so to speak.

Being a necessity then, there must be money in raising horses and it would seem that no one could make it a better paying business than the farmer who having other lines of farming to do, needs horses to do his work. In the last few years the gas tractor has replaced stock to a great extent on the larger grain ranches where stock is only worked a small part of the year and has to be maintained the balance of the year, so we may say horse breeding on the large grain ranch becomes a smaller factor each year.

The somebody who can raise horses profitably though, is the alfalfa grower, and it is immaterial whether he sells his hay or feeds it to stock, he has to have horses and should have good ones, too.

We know a man who raises purebred dairy cattle and claims that by raising good draft horses in connection with his cattle he can make more money from a good brood mare in a year than he can from his high priced dairy cow, his line of reasoning being as follows:

He has to have a couple of teams to do his farm work, so buys four good sound mares of the larger breeds. These horses do his work a great deal easier and better than smaller horses would and by breeding to a good stallion he is able to get good sized colts. By the time these colts are two year olds they are able to earn their feed, or can be sold for from $200 upward, according to their quality and breeding.

He figures that the dam has earned her own keep and also the colt's up to two years of age and besides has produced $200 or more a year from the offspring. A herd of cows which produce equally as well would be the exception rather than the rule but one should not assume that strictly horse raising is preferable to cattle raising, as without the alfalfa and cows the brood mare could not have an opportunity of earning her keep, especially if one were to specialize on horses.

If this man's experience is any criterion then, and we believe it is, farmers who have feed and use one or two teams of work horses should endeaver to buy only sound, well bred and good sized young mares and raise colts as a by-product if nothing else.

We do not mean that the farmers should raise better horses for the good of the country or any other philanthropic mission, but rather for the benefit of his own bank account. One thing must not be lost sight of though, and that is that the markets demand a horse to be sound and of sufficient size to haul heavy loads so do not raise scrubs.

CAUSE OF "LOSS OF CUD."

To the Editor: Through the RURAL PRESS can you give me some advice on treating a cow of mine? Being a pure bred Jersey and an excellent producer, I am anxious to save her. About three months ago she commenced to fail on her milk and soon went dry, although on good feed. Did not seem to be sick, but did not eat ravenously as she generally did, and little was thought of it. During the past six weeks she has failed rapidly. Does not chew her cud, froths at the mouth, runs at the eyes, and when she eats anything much it bloats her. In fact, she seems bloated all the time. She is lifeless and will hardly move around, getting very thin, and hair standing the wrong way. Have been trying to keep her up with bran, alfalfa, meal and such soft feeds, as she eats sparingly. I thought it was her teeth bothering her, but had a veterinary examine her and he pronounced her teeth O. K. He said he thought the muscles of the jaw had contracted, as he could not get her mouth open as wide as he should have, and on account of seeming pain in chewing. He advised rubbing jaws with liniment and giving salts to relieve indigestion which causes the bloat. This cow will calve in about six weeks, and she is twelve years old. Is there such a thing as a cow losing her cud?—SUBSCRIBER, San Luis Obispo.

Answer by Dr. E. J. Creely.

Most people imagine a cow's cud is something material. As a matter of fact, in a certain sense the words appetite and cud are synonymous. You can say a cow has lost her appetite or a cow has lost her cud. Now any sickness severe enough will cause a cow to lose her appetite. The bloating is caused from indigestion secondary to some organic disease, probably tuberculosis. Keep up the cow's strength by giving condensed foods or drenches of egg-nog, gruel or greens. Give warm salt water injections twice daily and give the following mixture: Quinine sulphate, 2 ounces; Antipyrine, 1 ounce; ammonia muriate, 3 ounces; alcohol, 1 quart; water, 1 quart. Mix; give two ounces every four hours.—SAN FRANCISCO VETERINARY COLLEGE.

SEPARATOR AS MILK PURIFIER.

To the Editor: There is a man in this neighborhood who contends that a cream separator purifies the milk that passes through it. I say that it does not purify the milk. What is your opinion? I agree that it does take out some of the heavy particles of dirt and filth, but that it cannot take out what is already in solution with the milk. If it does purify the milk, will you please tell me what action of the separator is the purifying agency?—An Interested Subscriber, Hughson.

You lose, and your neighbor can have the fun of saying, "I told you so," provided you make the RURAL PRESS the referee. The purification naturally cannot be very great, and if milk is produced in unsanitary fashion, that is, filth of any kind allowed access, running through the separator will do little, if any, good. Nevertheless the separator does remove more than just the solid particles of dirt. The purifying comes by leaving behind the separator slime, so called, the slimy material left behind after a good deal of milk has been run through. In fact some creameries separate milk, only to mix milk and cream again, largely for the purpose of removing the impurities found in the slime. It would be done oftener, only the cream rises slowly on such milk, and the housewives complain that the dealer is taking out the fat, that "the cream won't rise any more." In this slime are not only some of the impurities, like bits of hair and such things th fall into the milk, but also some of the fibr matter that is part of the milk, and as this gath being pulled out by gravity as are the fat particles, it seems to gather with it a few more bacteria than remain in the milk itself. If there are many bacteria in the whole milk the number removed will be too small to count much, but still there will be many more in the slime weight for weight than in the milk. Material in real solution, as sugar is in solution in water, naturally is practically unaffected by separation. You are therefore right to the extent that you cannot produce unsanitary milk and clean it with the separator, but your neighbor is right to the extent that the separator does remove some impurities and is used just for that purpose.

SORGHUM FOR SILAGE.

To the Editor: Could a person sow sorghum, cut it while very green for ensilage, then irrigate and get another cutting? Would cutting it so green make poor feed, as I don't suppose the sugar is much advanced in it? I have been told that cattle pastured on sorghum will bloat. Would that also occur when used as ensilage? How much more sugar and general food value, that is for milk, is there in sorghum than in Egyptian corn? Thanking you for this and past favors, I am yours for continued success in your work of educating the California farmer along intensive lines.—Subscriber, Dixon.

Answer by J. I. Thompson, University Farm, Davis.

Sorghum makes quite desirable silage, but must be mature, so I doubt very much if you could get two crops in one year that would mature properly. When too green it also then makes poor feed, for it is not sufficiently mature to contain nearly the amount of carbohydrates that it has later. It is not only liable to cause bloat, but in a few instances has been known to kill stock by poisoning. However, this is due to the development of prussic acid in the stubs that are left in the ground after the material is cut. When put in the silo in sufficiently mature form, it not only makes good silage, but is relished very much by stock. It is nearly 20% higher in feeding value, when silaged, than Egyptian corn.

FLEA KILLING.

To the Editor: My ranch is overrun with fleas. Have cleaned out the barns and sprayed with lime and sulphur sheep dip. That had no effect. Then tried hydrated lime, and they seemed to thrive on that. Have been told that sulphur will kill them. Do you know? Crude oil would get them, I guess, but a person couldn't very well put that in a barn where stock are standing. Any information you can give me will be very acceptable, as they are a pest.—Rancher, Dixon.

The flea question has been discussed pretty thoroughly here the last few months, and references thereto can be found by consulting the index of the last issue in June, and we are pretty near at the end of our tether. Sulphur fumes would do the business, if you can lock up the barn tight enough and burn enough sulphur. In the poultry department this week something is said on this subject. We don't believe that sulphur sprinkled around would be very effective. Could suggest the purchase of several sheep, keeping them around the barn, as fleas that get into wool soon cease from troubling. One subscriber reported that hogs provided an excellent means of distributing oil around. That is, they were given frequent coverings with crude oil, and the fleas jumping thereon wished they hadn't, and thus a bad infestation of fleas was cleaned out. If others can suggest something not recently suggested it might be a further aid. After your ill success thus far, would like to know how you ultimately succeed.

A San Francisco daily paper states that arrangements have been made by capitalists to ship large numbers of cattle on the hoof from South America and Australia to California, to be placed on the ranges and fattened. It is claimed that the plans of the men behind the scheme call for the importation of more than 50,000 head of cattle annually.

Higher Wages, Better Results.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

How can the farmer sufficiently interest the hired man to obtain the most work for the wages paid? The above question has been given a great deal of attention by farmers for a long time but we doubt if many have solved the question as well as a dairyman whom we have in mind.

This man has 65 acres of alfalfa land and runs a good sized dairy and hog ranch.

Being a good business man and also a progressive dairyman he found that if he depended upon ordinary hired help at so much a month he could not get a man that would enter into the business heart and soul and endeavor to get the maximum results.

After sizing the situation up from all sides he arrived at the following conclusions: first, he wanted a man whom he could trust with the feeding, milking, testing and general care of his cows; also one who would keep accurate data on the hog lots. This man had to be one who would take an owner's interest, for although the owner lives on the ranch and spends all of his time there, he did not expect to do much manual labor, preferring to simply superintend the work of others.

The hired man then also had to be more intelligent than the average hired man as he really had to take entire charge of the dairy cows and hogs and this man was hard to find, no matter what salary was paid.

Putting himself in the hired man's shoes he decided that if he were a competent man in all respects working for wages the principal object would be the salary every month and as that is usually small he would not take any real pride in his work.

Now the man he was to hire had to take an interest in his work or else the profits would not be so large, so after careful figuring the following scheme was outlined:

The owner was to furnish all cows, hogs, feeds, dairy equipment and a dwelling house. The hired man was to either do all of the milking or hire an assistant to help him feed the cows and hogs, in fact perform all of the ordinary labor as far as taking care of the stock and farm was concerned. Also he was to weigh the milk each milking, test once a month and furnish a test sheet to the owner once a month with the name of each cow, number of pounds of milk, percentage of butter fat and number of pounds of fat for the month.

As payment for his work the hired man was to receive: first, one-fourth of the gross returns from the butter fat, one-fourth of the gross returns from the hog lots, the pigs to be sold at six or eight weeks of age to neighboring ranchers, and one-quarter of the gross returns from bull calves which were vealed, also $5.00 for each heifer raised to one year of age and all bull calves raised to one year of age.

The duties of the owner were to have performed all farm work, care of horses, etc., and as before mentoined, being a progressive dairyman he was to furnish as feed, alfalfa and concentrates such as beet pulp, barley, etc.

After submitting this plan to one of his milkers it was adopted something over three years ago. The first year the hired man after paying his one milker's wages, received as his share, $800.00. The next year by having better bred young stock coming on and through better feeding methods, his salary increased a good deal and last year after paying his expenses, he made $1,300.00 for himself.

This seems a good deal to pay a man for milking cows when the average man will work for from $360.00 to $420.00 a year and his board, but by studying the owner's returns one finds his gross and net returns much larger than ever before and that too, without practically any care of the dairy.

These figures would perhaps vary one way or the other under different conditions for this man runs his ranch on the highest dairy standards and in that way makes both his and the hired man's revenue much larger. Besides the increased returns the help is practically permanent, his first man having stayed for three years, after which he started dairying for himself and now another man has taken charge who is doing equally as well.

This system is very much the same as that in use by a great many business concerns who hire men on the bonus system, that is, pay so much a month with extra pay at the end of the year, providing they have earned it, and as it has proven very successful in commercial lines the above experience seems to indicate that it would be successful among farmers.

WHAT IS A SILO?

To the Editor: Please tell me through the columns of your paper, just what the principle of a silo is, and how it is filled, in fact would like to know just what a silo is for and how it is worked. —W. M. W., Groveland.

A silo looks like an overgrown water tank but is as big at the top and middle as at the bottom. Instead of holding water it holds green corn, green alfalfa, or some such crop. It is supposed to be water tight and air tight, for whenever air gets in the material inside near the leak, which is called silage, or ensilage, gets mouldy, or otherwise spoils. A silo on an average dairy may run about 14 feet in diameter by 30 feet high, but silos can be very much larger or somewhat smaller, although the proportions are aobut as above. This round, tank shaped silo has been found to be the best, we might say the only kind to build. As you will have seen in the RURAL PRESS at various times, they can be built from various materials, all of which have both advantages and disadvantages but prove to be just about the best thing for a dairy that there is when well built and handled.

What's It Good For?—The main purpose of a silo is to fool the cows into thinking it is spring time all the year round. Everybody knows how any cow half deserving the name will fill the bucket when the grass is green and she has opportunity to get outside of all she wants. Hay is all right, but it alone is not the milk maker that green stuff is with the hay. The green stuff put into the silo keeps green and moist, changing by fermentation into a kind of sauerkraut and what sauerkraut is to a Dutchman, silage is to a dairy cow. In fact silage is good for all kinds of stock, beef and dairy cattle, horses and sheep, though the dairy cow is the champion consumer of it.

As we understand it, you can't get good sauerkraut in a leaky barrel. Anyway, yon can't get silage that is fit to eat from a leaky silo. The walls must be air tight and where a leak comes there will be a foot or so of spoiled, or mouldy silage to throw out. At the top a foot or so of ensilage may spoil and does spoil if left undisturbed. This forms a tight roof over the rest and when feeding begins this top layer is thrown overboard into the manure heap. The good silage, which is fermented and sour would soon spoil too, with this covering removed, but will keep for several days. Before those days have passed it has been fed to the cows and so nothing except the top layer, or that around leaks, becomes unfit to eat. In California dairymen very often start feeding as soon as the corn, or other material is put in and with a tight silo not a bit is wasted and until all is gone the cows have green feed with their hay, think it is spring and do finely, for all cows do better and are better with some green food.

Corn Best Silage.—You can put almost any green crop in the silo and it will ferment in about the same way and make good cow feed, but the champion material is corn, Indian corn, cut in the milk stage. Alfalfa will do, but is harder to pack tightly and will spoil easier. Sorghum gives good satisfaction with some people and less with others. Green barley and oats may also be used. A very good process is to grow and feed alfalfa hay and every fall plow up a little alfalfa and plant oats or barley, then when this is green and say in the milk, fill the silo up with it and start feeding. Use that same land and to grow a big crop of Indian corn, for you can grow lots of corn on old alfalfa land with irrigation and by the time the barley silage is fed the corn will be ready to be put in. Then you can plant barley again and keep on feeding one crop while the other is growing, thus having the ground in use all the time and green food all the time. When necessary, plant again to alfalfa and use other alfalfa land for corn and barley. Or, you can use first or last cutting of alfalfa or any such combination that you want.

The silo will hold an awful amount of feed and the higher it is the tighter the material will pack, so that there may be twice as much food in the bottom foot as at the top. Whatever material is put in, it has to be chopped up fine in order to get it packed solidly so that there will not be air enough to make it ferment to far or get mouldy and spoil. The corn or alfalfa is cut up fine and put into the silo by a specially built machine, operated by an engine. Such equipment will cost from $175 to $400, roughly speaking. A very good way is for a number of dairymen to use the same machine. Sometimes a machine owner contracts to fill the silo. The stuff is usually blown cheaply and quickly into the silo by a swift current of air. The silage should be tramped tight by some one inside, especially around the edges. Doors are placed up and down on one side of the structure. The cost of the silo varies according to whether it is stave, studding and resaw, concrete, or however built, but it is a very cheap way of holding feed.

Don't hesitate about asking any other questions, or the same thing over if the answer is not clear, for the silo is one of the best things that ever struck California dairying, they are going up all over the country and there are few progressive dairymen who believe they can get along without one.

GOATS VS. COW MILK

To the Editor: Will you kindly inform me through your query column as to the relative proportion of butter fat in goat's milk and in the richest cow's milk?—R. L. L., Oakland.

Goat's milk, like cow's milk, differs with different breeds and different animals in the breed. Jersey milk is the richest milk of all common dairy cows and contains about 5.6 per cent fat as an average. Individuals may go very much higher, say to 6.5 or 7 per cent without being extraordinary and in rare cases go very much higher. The common milch goat has milk with fat varying from 3 to 7 per cent.

We give below a table showing the approximate composition of milk of the Jersey cow, of the average milch goat and of human milk, which last we include on account of goat milk being used so extensively as an infant food.

	Jersey	Goat	Human
Fat	5.61%	6.11%	2.90%
Protein	3.91%	3.94%	1.60%
Sugar	5.15%	4.68%	4.68%
Ash	.74%	.79%	.31%
Total	15.41%	15.52%	9.49%

Dr. Creely has sent us the following statement of the variation in milk composition in a herd of six Maltese goats, which will show what a person could expect if he would depend on a general statement. We include the composition of average milk from Angora does, the blood of which is often well represented in the common goat found in town lots here.

	Variation	Angora Milk
Fat	4.5 to 5.3%	7.30%
Protein	3.4 to 3.8%	4.18%
Sugar	4.2 to 4.6%	4.10%
Ash	.62 to .69%	1.23%

INFECTIOUS HOG DISEASES

I have four hogs in pen feeding milk from separator, have lost four, they have lumps come on their legs about half the size of hen's eggs which make them lame. Finally they drag their legs along and get so they cannot walk and die. Will you kindly advise me what this is and what to do for them?—A SUBSCRIBER, Dos Palos.

ANSWER BY DR. E. J. CREELY.

This is probably an infection due to the necrosis germ (Bacillus necrophorus) which is common in hogs, and causes various necrotic lesions, as well as abscess formations. Clean up and disinfect the hog pen. Spray or dip hogs in a 2% solution of creolin. If there are any sick hogs left examine the lumps and if they feel as if

there is fluid inside, open with a sharp knife and wash interior out with the above disinfectant solution. Burn or thoroughly disinfect the contents of the abscess. If possible, place all healthy hogs, after disinfecting them, in new, clean quarters.

Barn for Small Dairy.

To the Editor: Have you had any plans in your paper in the past for a dairy barn with a capacity for 12 cows? As I contemplate building a new barn and wish to comply with the State dairy regulations, I would appreciate any plans you might suggest.—W. O. L., Escalon.

ANSWER BY J. C. LOOMIS.

As you do not say whether you wish to build a combination barn or a strictly dairy barn, we give in the following the outline for both kinds as seen in use in this State.

It might be well to mention, though, that the cut shown on page 257 of the issue of March 1, 1913, of the PRESS illustrates what is considered to be a very good plan for a dairy of any size. This barn may be built for one string or a dozen, and is as well ventilated and sanitary for one as the other; also economically constructed.

About the best general purpose barn we have seen which can be erected at a reasonable figure is one being used on C. Brown's dairy near Tulare.

The building itself is built on the gable roof plan, which allows a large space in the center for hay. The spaces on each side could be used for dairy purposes, but Mr. Brown only milks 20 cows, so left one side for a buggy and tool room. The barn faces the east and the south side was fitted up for the milking quarters.

The back wall of the manger is separated from the hay by an aisle about 3 or 4 feet wide. The manger is made of concrete, the walls of which are 4 inches thick and 2½ feet apart. This makes a manger 2½ feet wide and 6 inches deep, all of concrete, and at an elevation 10 inches from the main floor of the barn. The stanchions are placed on top of the front manger wall and are made out of 2x4. As Jerseys are milked, the opening of the stanchion is 6½ inches 3½ feet apart, but for Holsteins or larger breeds more room should be allowed. The stall space, or that between the stanchion and the gutter is also governed by the size of the cows, Jerseys requiring about 5 feet and Holsteins from 5½ to 6 feet. The gutter is 12 inches wide, and as the back floor space is 2 inches lower than the stall space, it makes the gutter 6 inches deep from the high side and 4 inches from the low side. This gutter has a gradual slope with the whole cement floor of 6 inches to 100 feet, thus doing away with a shallow gutter at one end and a deep one at the other, which happens where only the gutter slopes. The space back of the gutter is 6 feet wide and, as before stated, 2 inches below the stall space, so built that any droppings may splash away from the milker.

This floor extends to the back wall, which is 6 inches wide and 4 feet high, made of concrete. The advantage of a cement wall this high is that the spatterings can be washed off with a hose and in that way kept perfectly clean with a small amount of work. This wall also acts as a foundation for the outside wall of the building, which is made of 2x4 studding covered with rustic.

Openings are cut in this back wall above the cement, 3 feet apart, and closed with windows operated on a gang lever which closes or opens them all with one lever.

The entrance for the cows is also on the south side, being made through a large door hung on a roller slide. Doors hung in the same way were made at the east and west ends of the barn, the one on the east end being used to carry the milk cans through to the separator house.

Water is piped along the wall, with faucets at regular intervals, and is used for flushing purposes, but where water is not available, sand scattered over the floor is very good, as it can be easily cleaned up and keeps the floor clean.

The floors are, as before stated, made of concrete throughout, being 4 inches thick. Although the law only compels one to have a water-proof floor, either of lumber or other material, concrete is considered the best to use, as it is cheap and lasting, and we believe in your section gravel can be secured nearby which can be had for the hauling.

Home-made partitions for stall were made and set into the concrete with 2-inch gas pipe, being about 3½ feet high and extending out from the stanchion about 4 feet. These keep the cows from crowding the milker during milking time.

The separator house in this instance is located some distance from the barn in the lower part of the cement-block tank house, and where a tank house is built there is perhaps no better or more economical location, as the roof is already provided and very little extra piping is necessary for the water supply. The floor of the separator house should be made of concrete, drained to either the center or to one corner and carried off through a drain pipe some distance from the building. A good way to enclose the separator house of this kind is to build up walls with lumber or cement to a height of about 5 feet and enclose from there up to the ceiling with galvanized screen, which is not so apt to rust as ordinary screen. With a screen door this makes a cool, well ventilated house at a very reasonable cost.

The notion seems to prevail that it is necessary to have the separator house some distance from the barn, but the law only requires it to be under separate roof. It might be suggested that the separator house should be so located that the prevailing winds blow from the milk house toward the barn, as in this way foul odors from the barn are not so apt to be found around the milk house. Methods of draining the barn and separator house given in an account last week of A. B. Humphrey's barn fully cover that subject.

The strictly milking barn before mentioned can be very economically erected with floors and mangers as described, only the roof being different. One seen on T. J. Gilkerson's ranch in Kings county is so constructed and has proven very satisfactory. It is built in the shape of a shed roof, the front being boarded with 1x12 up to about 3 feet, where an opening the full length of the barn is left about 3 feet high for feeding. Above that it is boarded up to the roof, which is perhaps 12 feet high in front. The back side is naturally lower, being about 8 or 9 feet high, with an opening the entire length about 5 feet from the floor, which gives good ventilation.

This barn makes about the cheapest and most sanitary one which we have ever seen, and as both of those described are being used for sweet cream production they more than meet the necessary requirements for butter-fat production.

C. A. Starkweather, the dairy inspector for your district, headquarters at Modesto, is well posted on dairy buildings, and would no doubt be able to give you further advice on some of his trips through your section.

The Western Equipment Co. have a number of good dairy barn plans which can be had for the asking through their advertisement in this paper.

AN IMPENDING REVOLUTION.

(*Continued From Page 25.*)

their ranges, or have sold to others when their ranges have been in bad shape, which has been the case this year, but the small man has always been ruled out of it. In fact, there has apparently been a deliberate intention in a few instances to rule the small man out, but that cuts little figure when the facts show that the natural and profitable thing is to have the cattle finished by the feeder. Buying, feeding and finishing will start soon enough then.

We have: first, to overcome the dislike of doing things different than they have been done; second, to find some way of getting steers or sheep into the hands of the small man; third, to get the finished cattle into the hands of the packers.

The Eastern Way.—According to the Eastern method of doing things, the commission man is the indispensible article; he catches them coming and going, and though sworn at by the feeder, actually is a most necessary institution, though possibly there would be a little more profit if he could be sidetracked and the process work as smoothly as before.

The range man ships a train load of cattle to the stockyards and the commission house distributes them among the farmers, selling them outright. Then when they are ready he collects them and sells them to the packer, charging his commission again. This looks like a double profit, though naturally it costs to distribute and sell and to collect and sell, and the distribution will have to be figured out some way in California and the final marketing also.

Present conditions will not do, the deck is stacked against the small man, and will be until the whole method of operation is changed. It is, however, unnecessary here to discuss this subject in detail.

Suffice it to say at this stage of the game that the plan has been solved in the Northwest, where the finishing of range cattle is going ahead full blast. They even ship range cattle from as far as Texas, one large lot going up from that State the last two weeks that was brought to our attention, and perhaps train loads more. The banks at first would not advance money on feeder stock, but since the organization of a well capitalized company to help out, there has been no trouble on that score and lack of funds cuts no figure whatever when a man has the feed and wants the cattle. The matter of finance will be less trouble here, in spots at least, as the person previously quoted claims that the banks will advance all the money required in his district if there is a good way to get the stock into the hands of the feeeder and then out again.

Furthermore, the settlement of the good valley land, we might say the utilization of nearly all good tillable land for intensive farming, mostly for alfalfa, is cutting off the very supplies with which many range cattle have received their "finishing," if it could be called that, and at the same time provides feed for real finishing and more of it by far than was had before.

The diminishing supply of beef and mutton is keeping pace in the opposite direction with the increasing population and demand for meat. Using only range land, unfit for tillage, as our only source of beef and mutton is unbelievable. Supplementing this range land with the vastly more productive irrigated land is the most natural thing in the world. It is inevitable. It will increase the stock producing powers of the range greatly, it will increase the price per pound of range cattle and sheep greatly and add besides the gain in weight that at first glance appears to be the reason for fattening cattle.

The thing that has made the change in the Northwest that we expect here has been the stockyards, for in the natural course of operation stock yards give the small man his best opportunity for getting his cattle to the market at decent prices. Besides, the promoters, with deliberate intention, have done all they could to induce the small rancher to raise hogs right, to buy feeder cattle, to handle and ship them in the right way. That is merely as a starter, as such a thing looks after itself when well begun. The Portland prices, by the way, always run higher than San Francisco prices, largely, we may well believe, from the system of operation.

Our Future System.—Our future method of operation in our alfalfa districts will probably be something as follows: Dairying will advance as rapidly as it has, or faster. It always will be a profitable way, probably the most profitable way, to dispose of alfalfa. The quality of the stock will be like that in our illustration. (We are not referring to breed, but to good breeding.) Our whole course of development shows just this.

Alfalfa meal mills and the city and other markets will dispose of part of the rest. Finally, the sheep and the beef cattle will come from the ranges, be finished with alfalfa and probably corn silage and some grain, possibly with other feeds also, and will go off to the slaughter according to the method practiced in the Middle West and the Northwest. We have got the edge on them there in alfalfa, the greatest flesh building food there is, and can get the supplemental feed necessary to go with it. Our stock pages of the issue of July 5 will indicate briefly how some of this is done now and what people are thinking.

There is no great rush to start feeding just now. Things also will work themselves out and they will work out better and quicker if the future is kept in mind and every advantage, by publicity and otherwise, given to help along.

Hints for Dairy and Hog Men.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

A good system of tagging purebred cattle is in use at the Stanford ranch at Vina.

Having a large herd of Holsteins, there are as a consequence large numbers of calves each year. The ordinary method of ear tags, punches, etc., was discarded in favor of a leather collar.

This collar is made in two sizes, one for calves and one for matured animals. Brass name plates are secured, and the name and number of each calf stamped on.

This name plate is then riveted onto the collar with copper rivets. The smaller sized collar is used until an animal's neck grows too large, when the rivets are removed and the name plate riveted onto a larger collar. In this manner the stock can always be identified, there are no ear tags to lose, or disfigure the ears, and as the small collar when it is outgrown can be used on the small calves again, it is not an expensive practice.

Another practice on this ranch, which is very effective is the manner in which the bulls are handled.

Each bull has a large box-stall well bedded with straw, with a manger at one end. Near the manger is a round post, perhaps 6 inches in diameter, running from the floor to the ceiling and securely fastened.

The bull has a strong leather collar with a large iron ring run through it. This ring encircles the pole and in this manner the bull is securely fastened.

With plenty of room for the ring to slip up or down the pole, the bull's head is as free as though tied with a halter and may also reach the manger or move around freely.

This method seems an extra good one for cross bulls, for when secured in this manner there is no chance for them to harm any one, and it has been found that with this device cross bulls become much better dispositioned through being able to handle them more.

When wanted for service, a chain can be snapped into the ring in the nose, the collar unbuckled, and the bull led out.

Where hogs are to be confined in small lots a movable panel fence and movable house is used by a great many hog men in this State.

The houses are built like the old fashioned chicken coop, being about 6 feet high in the center, the roof extending to the ground with a spread of 5 or 6 feet at the bottom. A house this shape 7 feet long with one end boarded up affords good, dry shelter in the winter and shade in the summer for brood sows. The panels for the fence may be made 16 feet long and four feet high with 1x4 rough lumber. By driving down posts every 16 feet this fence is very substantial and is easily moved, hog men considering the practice of plowing up the pasture and sowing grain at regular intervals very essential to the healthy condition of good pigs.

REQUIREMENTS FOR STOCK IMPORTATION.

There have been several changes made by the last legislature in the requirements confronting the importation of live stock into California. Dr. Charles Keane, State Veterinarian, has made a summary of the way the law will stand, which should be of value to the large number of purebred men who are establishing or building up herds in part or whole by stock purchased in other States. The changes will go into effect September 8.

The requirements then will be, for the different kinds of stock, as follows:

Horses, Mules and Asses.—Health certificate.

Cattle (dairy and breeding).—Health certificates, including tuberculin test certificate for dairy and breeding cattle over six months of age. Such certificate must show on its face the following: That each individual animal in the shipment has been carefully examined and subjected to a tuberculin test; that they are free from any suspicious symptoms of tuberculosis or other infectious or contagious disease; that each has failed to react to said test; certificate must contain complete temperature record of the test; there must be attached to said certificate signed statement by owner, consignor or shipper, certifying that none of the animals had previously reacted to the tuberculin test within three months, and that none of the animals had been subjected to any treatment designed to negative the action of the tuberculin test.

Cattle (exhibition purposes).—May be shipped into California without tuberculin test on permit from State Veterinarian of California. In such case permit must be attached to the way bill.

Cattle (slaughter and feeding cattle).—No health certificate or tuberculin test required when such cattle are shipped from States or parts of States not quar-

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antined by the United States Department of Agriculture for Southern cattle fever, or other infectious or contagious diseases. Cattle intended for slaughter and feeding purposes must, however, be accompanied by a signed statement of the owner or the shipper showing the purpose for which such cattle are being brought into California.

Hogs—Health certificate.

Sheep.—In accordance with federal regulations.

Who May Inspect.—Any qualified veterinarian who is a graduate of a duly recognized and accredited veterinary college.

Official.—Dr. Charles Keane, State Veterinarian, Sacramento, California.

HOW MUCH SHOULD THE SILO HOLD?

The amount of silage required and the size of silo needed to hold it can be quite closely calculated provided the number and kind of animals to be fed from it are known before building.

An average cow or beef animal may be fed about thirty-five pounds of silage per day and the usual period during which silage is used in this latitude will be about 210 days. Large animals or those that are being fattened may consume considerably more than thirty-five pounds per day, but this has been found a fair average.

In a silo of ordinary depth, the average weight of the silage is about forty pounds per cubic foot. Near the top of the silo, however, where the pressure is not great, it will weigh only twenty-five pounds per cubic foot, while at the bottom of a thirty-five foot silo it may weigh sixty pounds. Taking these averages, if a cow eats thirty-five pounds of ensilage in a day, she will eat thirty-five fortieths, or seven-eighths of a cubic foot per day, and with this as a basis it is easy to determine the number of cubic feet of ensilage required to feed a cow or any number of cows throughout the season. The diameter of the silo must be such that the stock on hand can use one or two inches of silage off the top each day during the winter and at least three inches per day when summer feeding of silage is to be practiced. This is necessary to keep the silage from spoiling.

A silo ten feet in diameter is adapted to feeding ten mature cattle. One twelve feet in diameter will feed fifteen head, and one fourteen feet in diameter will meet the needs of twenty head; but if there are thirty or more cows to feed, a sixteen-foot silo should be erected. These silos should be thirty or forty feet, or even more in height.—A. D. Wilson, University Farm, St. Paul.

REARING CALVES ON SKIM-MILK.

The following question and answer came from the Colorado Agricultural College, but is good here, too.

What should be mixed into separator milk to be fed to calves? I had poor luck with my calves last summer; they seemed to be healthy but didn't grow very much. I always took the froth off as quickly as I finished turning the separator, but did not mix anything with the milk. How would ground corn and barley mixed, or either of them, put into the milk be? And when should calves be put on separator milk, or at what age?

Answer: Calves need some feed in addition to skim-milk, in order to replace the fat which has been taken off the milk. Cook whole flax seed, or flaxseed meal, and feed about a double handful at a feed mixed in the milk. If you cannot secure the oil meal or flax seed, use ground corn and oats preferably, or ground corn and barley.

In raising skim-milk calves you should dilute the whole milk about a week after calving, replacing whole milk with skim milk at the rate of an additional quart each week, so that at six weeks they should be on skim-milk without any whole milk.

Bess—Something that Jack said last night didn't sound just right.

Tess—What was that?

Bess—I told him if he called me pet names I wouldn't speak, and he replied that he would call me dear at any price.—Brooklyn Life.

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Live Stock at the Exposition.

(At the meeting of the California Livestock Breeders Association in San Francisco last Saturday, D. O. Lively, Chief of the Department of Livestock, delivered an address on the above subject which we can give only in part. It contains a number of facts not previously published which will be of great value to the purebred men and lovers of good stock in California. This address in part follows.)

The Livestock Department of the Exposition was one of the first created and actively launched. Because of the time necessary for the breeding and production of types suitable for universal competition, much active work has already been done in every country where stock farming is a part of agriculture, the purpose being to bring out a representative display of horses, cattle, sheep, goats, poultry, pigeons, pet stock, dogs and cats. Countries that have heretofore not been represented at world's expositions in a showing of livestock will exhibit at San Francisco.

PRIZES.—The Exposition Company has set aside $175,000 to be used in cash prizes, and the group division of this amount will be as follows:

Horses	$50,000
Cattle	50,000
Sheep and Goats	25,000
Swine	25,000
Poultry, Pigeons and Pet Stock	12,500
Carloads Cattle, Sheep and Swine	7,500
Dogs and Cats	5,000

Supplemental cash premiums and trophies of plate, diplomas, etc., are being offered by clubs, societies and associations representing the various breeds of livestock and poultry, and a number of the States and countries will set aside part of their participation funds to pay shipping expenses and to duplicate premiums that may be won by their livestock at San Francisco. It is safe to estimate that the grand total of all the premium money to be distributed at San Francisco for livestock and poultry will be greater than ever before offered.

COMPETITIONS.—The time for holding the breed competitions will be in the months of October and November, 1915. The arrangement of the show periods in the several groups will be about as follows: horses, mules and asses, 12 days—perhaps the first twelve days of October; cattle, twelve days, from the 14th of October to the 25th of October; sheep and swine, twelve days, from the 27th of October to the 7th of November. Poultry, pigeons and pet stock will be arranged to extend over a period of about twelve or fourteen days, devoting three or four days to each of the three classes embraced in this group; carloads of livestock from November 8th to November 12th; dogs from November 15th to November 18th; cats from November 21st to November 24th. The arrangement of dates herein is subject to adjournment and change, but the exhibitor can be guided in a general way in making provision in accordance with the outline herein given.

SPACE AND ENTRIES.—There will be no charge for space, stall rent or entry. The Exposition will provide suitable accommodations for such exhibits of livestock as may be accepted, without charge. Expert committees representing poultry, pigeons, pet stock, dogs and cats will make a special arrangement for receiving, caging, feeding, caring for and returning exhibits under the five heads mentioned, charging therefor a nominal fee. Ample facilities will be provided for the distribution of feed and water. Forage and grain of good quality will be available to the exhibitors at reasonable prices at warehouses conveniently located. Exhibitors may bring with their stock a supply of forage and grain.

Entries on prescribed forms for the several sections must be filed with the Chief of the Department of Livestock on or before the dates upon which entries will close, as follows: horses, mules and asses, September 1, 1915; cattle, September 10, 1915; sheep and goats, September 15, 1915; swine, September 15, 1915; poultry, pigeons and pet stock, September 20, 1915; dogs and cats, September 25, 1915; carloads of cattle, sheep and swine, October 1, 1915.

HORSES.—The great transition through which the production of horses has gone will be exemplified in the display at San Francisco. The production of utility horses was never a more attractive pursuit than at this time, and there is a great unsupplied demand for saddle horses of quality. One of the world's big problems, the production of horses suitable for army remounts, will receive a large amount of attention. There will be an international conference, display and contest incident to cavalry horses, the result of which will make history in the horse world.

DAIRY CATTLE.—In addition to the regular competition for the breed prizes there will be a demonstration of advanced knowledge in dairying, a correlated exhibit of dairy products, international conferences for the study of the problems connected with production and marketing, dairy tests, actual exhibits of the type of cow that pays a profit, methods of feeding, systems of handling, and the appliances incident to the dairy industry to be included in a model creamery.

BEEF CATTLE.—In the beef cattle section there will be shown the use of silage in beef production and the change that has taken place within comparatively few years in types and market ages. The breed competitions will be a great feature

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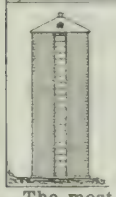
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and the interest of a number of foreign countries has already been enlisted.

SHEEP.—The growing call for mutton; the gradual closing in of the ranges; the ever existing demand for wool and the change in methods that is taking place in the sheep industry will reach fruition at San Francisco in an international sheep display that will mark an epoch in that industry. The breed prizes will be commensurate.

SWINE.—Practically every farmer in the world has a knowledge of swine raising, in which there is a growing interest. Every new agriculturist will include swine raising in his operations. There are new types and new methods of production which, together with liberal prize awards, wi l make the swine display at San Francisco notable.

GOATS.—The growth of the mohair industry; the increasing number of milch goats; the use of goats for clearing off timber undergrowth and the added demand for goat meat will render this section one of importance. No exposition heretofore has given a like amount of recognition to the goat industry.

POULTRY.—Including chickens, turkeys, ducks and geese, poultry is a billion-dollar industry in the United States, and in other countries of the world it occupies a like position. No part of agriculture comes in such close touch with the urban and suburban dweller. Liberal prizes, breed futurities, laying contests, standards of perfection, market types of poultry and the production and handling of eggs, will be the outstanding features; the growth of the societies and associations incident to the poultry industry will be fully exemplified in this branch of the Livestock Department. It is confidently expected that the poultry show at San Francisco in 1915 will, from every standpoint, surpass anything before given.

PIGEONS.—The commercial production of squabs, with its potentialities of supplying the demand for edible flesh, occasioned by the falling off in the supply of the meat producing animals; the wide spread of the fancy, both in this country and abroad, will be given due consideration both in arrangement of the exhibit and the giving of prizes.

SPECIAL FEATURES.—For the first time the performance of the trotting horse will be made a part of international exposition history. Under the auspices of the Pacific Coast Trotting Horse Breeders Association the Exposition will give two harness race meets, one in the spring and one in the fall, at which there will be distributed $225,000 in stakes and purses. With one or two exceptions the special stakes included in the grand aggregate of $225,000 will be the greatest that have ever been offered.

CONTINUOUS LIVESTOCK EXHIBIT.—Exposition experts concur in the statement that probably the entire attendance at an Exposition is interested in some form of animate life. In order that all the people that pass through the grounds may have the opportunity for study and information there will be types and specimens of each of the sections embraced in the Livestock Department on display from February 20th to December 4th, 1915.

The particular breed and type competitions will of course take place as hereinbefore outlined, but outstanding quality specimens will be maintained for exhibition purposes throughout the Exposition term. Animals or poultry intended for the competitions will not be expected to arrive until just prior to the dates tentatively given under the head of "Competitions," but this will not, of course, prevent animals which have been on display for a longer period from entering the contests for the cash prizes. This will be the first practically ten months livestock show ever given.

ABATING INSANITARY DAIRY.

To the Editor: Will you kindly tell me in the columns of your paper where I can get information regarding my neighbor's barnyard and hog pen. He has 30 cows and about 40 hogs across the road from my house and the wind comes from the direction of his barn and the odor is something terrible. Has California got a Board of Health and an inspector to make inspections? I am from Oregon and it would not be tolerated at all in that State. If they have an inspector, I would be glad to get in touch with him.—C. P. G., Turlock.

California doesn't al'ow Oregon to get ahead of her, and we have both Boards of Health and a State Dairy Bureau whose special business it is to see that such things are cleaned up. However, it is a big job for a few men to find every unsanitary dairy by themselves, and it is the duty of a good citizen to help the authorities in getting track of cases such as you describe. Write to F. W. Andreasen, Secretary State Dairy Bureau, San Francisco, and he will send an inspector around. The nearest inspector to you is C. A. Starkweather, Modesto, to whom you can write, if you like, instead of to the secretary. The Bureau can only see that the dairying is done properly and that clean, sanitary milk is produced. If hog pens can afflict the atmosphere and yet good milk be produced on the windward side of the pens or for some other reason, the Bureau would hardly have the right to interfere and you can notify the State Board of Health, Sacramento, or the County Board of Health, Modesto, but we have no doubt but what the Dairy Bureau will fix things up quickly enough.

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Breeding superior in milk and fat productions.

Animals well grown and health guaranteed.

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The Poultry and Pigeon Department has been revised and an increase has been made in premiums. In Pigeon Department no first premium will be less than $1.00; no second premium less than 50c.

A classification has been made for market culinary animals, providing premiums for rabbits and hares.

There has also been established boys' judging classes, and the sum of $400.00 set aside for premiums for boys who prove the best judges of live stock.

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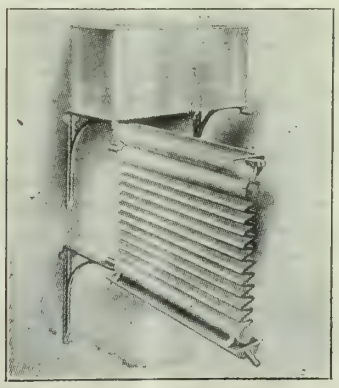

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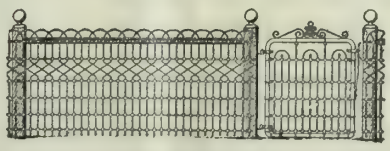

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Summer Management in the Poultry Yard.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

The subject of this article was suggested by an inquiry from a reader, who says, "Your articles have been a big help to me and now I am coming to you to see if you can tell me why my hens have stopped laying?"

Many times I have been told by people that the reason they do not like the large breeds is because they lose so much time through getting broody; while the small breeds keep on laying all the time.

Now there is no breed of fowls under the sun that will keep on laying continually month after month without a rest. In this case the flock is chiefly Minorcas and from 12 dozen eggs a day they have dwindled down to one dozen; but as the writer said, "they have done so well all spring and summer that I can't understand it."

NATURAL LAWS.—And yet this is one of the most natural things in the world, that these hens that have been rolling out eggs all spring should take a rest at this time. What they need now is a change in diet and conditions. All or any kind of vegetables, little or no meat, less mash and just grain and green food. Along with this must be shade. If there is not natural shade, then provide artificial shade where the hens run most, and above all plenty of clean cool water.

At this time of year fowls are preparing to commence to molt, the whole system seems to undergo a sort of change, and if the hens have been forced in the laying, a rest is just about the best thing that could happen before the molt commences, because during the rest, the system will take on a new hold of life that will help to carry even a weak hen over the crisis. If the hens have been yarded and it is possible to turn them out on pasture or even range without pasture and feed just one meal a day of grain and one of mangels or some other succulent vegetable, that is the best way to help start the hens on a good safe molt.

In this particular case the hens must have been on range all the time because the lady says, "The grasshoppers have come in here and the hens are eating hundreds of them; do you think they are the cause of the drop in the egg yield?"

GRASSHOPPERS ANIMAL FOOD.—It does not seem possible that the grasshoppers could be blamed for that, because they are a regular diet of all wild birds and in Dakota my hens never ate anything but the hoppers and pasture in summer. We never fed a bit of grain to laying hens that were on the range, nor to young stock after the first ten days. In fact, the hoppers will have a very different effect for as soon as the hens have had a natural rest they will lay better on a grasshopper diet, the only thing to guard against is over-stimulation from too much animal food.

By feeding lighter we not only cut down the expense, but we are helping the fowls to adjust themselves for the change in weather and the change that comes from the molt. About this time every year I commence to feed less grain, little or no mash, cutting off a little each day so that the change comes gradually and then if I can turn the hens out, so much the better. There are no males left in the yards, all being put in separate coops so no matter what color of hens they can all run out together. It does them good, braces them up and is better than tonics or stimulants.

I don't believe in starving to start the molt, as not all hens are strong enough to stand it, and even though they do appear to stand it, I question whether any such unnatural methods are good for the constitution.

CULL OUT ALL DRONES.—This is a good time to commence the culling and weeding out of all unprofitable hens and all cockerels that are not going to be worth breeding from. This not only saves feed but it makes more room for the good ones to grow, it leaves more shade for those that will pay a fair dividend for their keep, and it makes less work for those that are taking care of them. Every drone is just so much from the profit, the loss comes two-fold because it not only reduces the income but it increases the expense of the whole flock by detracting from the quality.

The average time for the molt is three months, so we can easily find how long the hens will be in getting into good laying condition after the molt begins. Most hens that are well cared for will lay far into the molt, at least enough to pay for their feed, and these are the hens to keep.

It is the care our hens get during that three months that makes for the profit they will make us in the winter months. The person with limited quarters must look to it that his flock are kept as clean as possible. It is not enough that they are free from vermin, the houses and yards must be kept clean. All vegetables such as mangels, cabbages, etc., must be cleared out of the yards after they have started to decay, as all such things cause bad odors that are injurious to the hens.

As no two poultry plants are just alike, so no fast rules can be laid down for any one to follow, but strict cleanliness and the laws that come the nearest to nature can be applied in all cases. Nature always tries to pay back, and sometimes the pay seems excessive for the amount of seed sown, as in the case of the man who used one board from an old blacksmith shop in making a poultry house and lost two valuable chickens through it.

But then nature never discriminates, it believes in giving value received every time, so when we learn how to sow and what to sow we shall know what to expect in return.

Raising poultry is not a lazy man's job by any means and those people that try to make it a lazy man's job pay the price. Neglecting the flock in summer means that they will negelct us in winter, and as winter is really the only time when we can count on making a fair profit from the hens, we surely ought to look out that we sow good enough seed to reap harvest in winter eggs.

SHADE MAKING.—The last week I have had to make more shade for my growing stock, having no natural shade at all it makes it imperative to provide some. So I went to work and made panels, such as can be used for a small poultry yard at any time when needed. I took 1x3 lumber, 4 feet long and 3 feet wide, fastened 2 inch mesh wire 3 feet wide on the frame, then covered with grain sacks cut open. These panels were set out in odd places, on boxes or anything handy, a crock of water set under and a box of grain. My young stock are left so that they can get out in a morning and they find that grain, eat what they want, then strike out on a foraging tour before I am out of bed.

When the heat of the day comes on they just loaf in the shade, then when it gets cool, off they go again, and they are growing like weeds.

An inquiry that comes this week is

POULTRY.

S. C. WHITE LEGHORNS—Heavy layers, California's greatest prize winning strain. Eggs, chicks, stock. Send for list. M. Dutterbernd, Petaluma.

BARRED PLYMOUTH ROCKS, White Minorcas, White Holland turkeys. Stock and eggs only. L. N. Cobbledick, Oakland.

BROWN LEGHORN ROOSTERS, chix and eggs, same in Barred Rocks, White Minorcas. W. S. Rose, Yuba City, Cal.

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from a lady who has ticks on her fowls. As that question was partly gone into last week, we will just take up one phase of it that was not covered.

This lady asks, "Would it be advisable to put a tent over the house and fumigate with the same kind of chemicals used on orange trees?"

ANSWER.—The only thing is, would the chemicals used for fumigating orange trees not be too expensive? Using the tent would be all right, but I would suggest using sulphur instead of chemicals (cyanide), as it would be so much cheaper and just as effective. The sulphur should be put either in an iron kettle or in a kind of camp fire hole in the ground, then make a small fire with kindling, put your sulphur on and get out as quick as possible. To make it burn good there should be a little draft from the bottom, all other holes must be closed tight or it will not be as effective. Anyone who has sulphured fruit will know how to fix it so that nothing will be left alive. About 10 or 15 cents worth of sulphur will do the job, while with the chemicals used on orange trees it costs considerable. Sulphur is a good and cheap insecticide.

After fumigating a house it should be thrown wide open for several hours before the hens are allowed to roost in it, otherwise it will give them a bad cold.

It is a good thing to remember that the good old summer time is the season for these things to increase and multiply, so we should be always on the watch for them and prepared to wage war, even a war of extermination, before they sap the life out of our poultry.

NAPA EGG LAYING CONTEST.

Four months have gone by in the Napa Egg Laying Contest and a most excellent showing has been made by a large number of pens. The record of several of the highest pens follows:

Blom & Son, White Leghorns	504
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Geo. D. Lubben, Barred Rocks	388
F. Bunges, White Leghorns	388
Chas. Swanson, White Leghorns	385
A. Worel, White Leghorns	384
E. H. McMillian, White Leghorns	382
C. G. Bates, Barred Rocks	380
C. B. Kimble, White Leghorns	378
H. C. Gilmer, White Minorcas	367

San Mateo Poultry Show.

A letter from A. R. Schroeder of San Gregorio states that the dates for the San Mateo Poultry Show are set for December 4 to 7. Henry Berrar of San Jose has been selected as judge and T. L. Green of San Mateo as superintendent. The show will be staged in a big tent located in the heart of San Mateo business section, and a big attendance is anticipated. For further particulars and entry blanks, write to the secretary.

MINOR SWINE DISEASES.

It is well known that cholera is the greatest swine disease. Nevertheless, others are important, and the following summary of these from a recent bulletin of the University of California on "Pork Production in California" will be of value.

Thumps affect young pigs from ten days to eight weeks old. The symptoms are: heavy breathing and a pulsing, beating action of the flanks. The cause is heavy feeding of the sow and not enough exercise for the pigs. If discovered in time, can generally be corrected by reducing the feed and compelling the pigs to take exercise.

A trouble in which the symptoms are similar, but is most liable to occur in older hogs which are very fat, is asthma. The affected animal should be kept in, away from all dust, fed light feeds and compelled to take plenty of exercise.

Canker is found among young pigs. Sore places appear about the mouth and nose, especially if the weather is cold or damp so that the pigs bury their heads in any filth or manure while sleeping. The treatment is to dip their heads in a bucket containing a 3% solution of some this station describes the method of prep- coal tar dip, and then provide clean sleeping quarters.

Scours, quite common in young pigs, may be due to wet, unclean quarters, too rapid changes of feed of sows, or overfeeding. If the sow is producing more milk than the pigs can take, the udder becomes feverish and scours in the pigs is the result. Correct the cause and feed a teaspoonful of baking soda in the feed to the sow twice a day until the pigs are normal. If any of the litter continue to show the trouble, they should be given a small amount of castor oil from a spoon, and, a few hours later, a small amount of soda dissolved in milk.

Piles is not uncommon in pigs being heavily fed on grain, or receiving an abundance of green alfalfa. It is the term applied to an eversion of the rectum. It may also be cause by either constipation or diarrhea. Remove the cause, wash the affected parts, and return them to place.

Worms are much more prevalent among hogs than is commonly believed. Oftentimes coughing, thought to be caused by dust, is due to worms. They may be found free in the intestinal tract or attached to the walls. They not only assimulate some of the food eaten by the pig, but also interfere with his digestive functions and make him more susceptible to disease. The symptoms are: coughing, tucked-up appearance at the flank, harshness of hair, and general lack of vigor. The appetite may be either voracious or squeamish. One of the most satisfactory remedies is copperas or sulphate of iron. The dose is one dram per 100 pounds hog, two drams per 300 pounds hog. It should be finely pulverized, dissolved in water and very carefully mixed with the slop. The trough should have a fence around it and a large gate provided so that the slop may be placed in the trough and all the pigs let in at one time, so that each gets his share. If they are uneven in size, they should be divided into lots according to size. This remedy should be fed every morning for a week, and followed by one dose of Glauber salts to clean out the digestive tract. It is not advisable to let the pigs run on pasture during this time, for the eggs of the parasites will be scattered about in such a manner that they may be later picked up by the hogs. keep them in a dry lot, and when the treatment is complete, rake up the droppings and burn them, or haul them to a remote field. Charcoal, wood ashes and salt mixed together and placed in an available box will be readily eaten and appreciated by the pigs and are undoubtedly beneficial in helping to rid the pigs of worms and keeping them in thrifty condition.

Anti-hog cholera serum for the prevention of hog cholera is produced by the Agricultural Experiment Station. Blank forms for making applications for the serum may be obtained by writing to the Veterinary Division, Agricultural Experiment Station, Berkeley. Bulletin 229 of aration, distribution, and use of serum. This bulletin may be secured free of charge by writing to the Director of the Agricultural Experiment Station, Berkeley, California.

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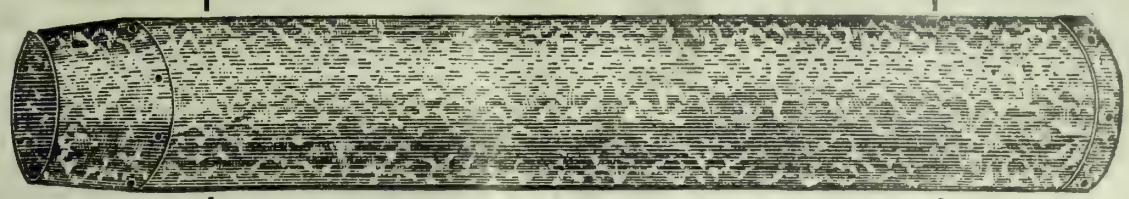

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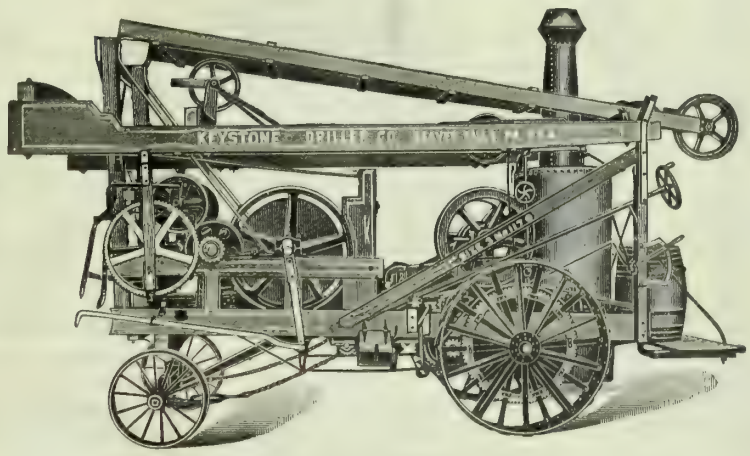

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Asparagus Culture, Hexamer	.50
New Onion Culture, Greiner	.50
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Farm Gas Engines, Brate	1.10
The Book of Alfalfa, Coburn	$2.00
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Farm Buildings	2.20
Breeding Farm Animals, Marshall	1.60

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The Home Circle.

Summer Dangers for Children.

Summer is a more dangerous time for young children than winter, especially if the summer is a sultry one. This is a fact which parents would do well to remember, for many of the dangers could be quite easily avoided with a very little care and common sense.

In the dressing of little girls in summer is there any of the latter qualifications shown by the mother who makes them wear "Dutch bonnets?" These may be well enough in winter, but in summer they are not only injurious to the eyes by reason of the absolute lack of shelter the wearer suffers from, but they are a constant source of danger if the child is exposed to much sun.

Children are particularly susceptible to sunstroke and heat exhaustion. To tie the head up in a bonnet of this description, which binds the hair closely to the scalp, prevents the access of air to the head, and the escape of perspiration is so evident a courting of these disasters that one can only marvel that any woman of the most average intelligence can be blind to the fact that her child runs a serious risk by wearing such headgear in warm weather.

The sea beach has its danger. summer—in very warm climates that of sunstroke, or "sunfever," is one of them. Physicians in practice in southern seaside resorts, with beaches facing south, say that they meet with many cases every summer of fever and delirium simply from overexposure to the midday sun. All the benefit of the sumer holiday is frequently nullified by illness brought on in this way.

The skull bones in children are thinner than in adults, and the brain is therefore more accessible to the force of the sun's rays. Besides this, it is too often forgotten that exposure of the back to the sun may cause sun fever (if the sun be very powerful), even though the head is covered.

In the tropics spinal pads are worn, as well as sun helmets, to protect from this danger, and yet in summer we often see children digging on broiling sands or stones with no protection from the ardent rays of the sun.

Milk and Fruit in Summer.—In these two most innocent and wholesome of all foodstuffs lie some of the most serious dangers to young children in midsummer.

With a sudden rise in temperature the mortality rate of infants always rises correspondingly. This is almost altogether owing to deterioration in the quality of milk produced by hot weather. One bottle of milk which has just begun to turn may prove fatal to a baby, and it should be remembered that milk may have begun to turn without being perceptibly sour to the sense of smell.

Two rules should be laid down in all nurseries during a hot summer. If these were universally observed much diarrhea and other intestinal troubles would be avoided. They are: (1) That before the milk is prepared for an infant's bottle it should be tested with litmus paper. (2) If the test proves the milk to be acid, condensed milk should be substituted, unless milk that will stand the test can at once be procured.

The testing of milk with Litmus paper is absolutely simple. Procure some neutral Litmus paper from the chemist, put two or three drops of milk upon a strip of it and after a few seconds wash this off with water. If the milk is alkaline the blue Litmus paper will show a deeper blue stain; if acid, there will be a red stain on the paper.

It is necessary to note that Litmus paper must be kept in a glass-stoppered bottle, as the oxygen in the air tends to redden it, therefore if it be much exposed to air its evidence would not be so trustworthy.

Condensed milk, of course, is no proper substitute for fresh milk, and as a continued diet it is very unfit for infants, as it may cause scurvy and rickets, but for use during a spell of hot weather it is quite otherwise. It is then most valuable, as there is no danger of its being sour. The tin when opened should be kept in a cool place and free from dust.

Overripe and underripe fruit have each their dangers. The latter is the one most prevalent. A family of children who have the run of a kitchen garden are rarely free from gastric attacks during the summer.

These give a continual anxiety to mothers, who might save themselves from it and the children the illness by the expedient—not so simple as it sounds, however—of keeping them out of the garden, and so preventing the consumption of green berries, half ripe cherries, currants, apples and plums.

The very best treatment when any of these have been eaten and give rise to diarrhea is a dose of castor oil; this removes the irritating substance and checks the mischief.

Very thin woolen combination, with a light overall or knickerbocker suit of holland, blue drill, white pique or galatea, is the most suitable and healthiest clothing for children during the hot season.

Sandals are better than boots or shoes and stockings, but when the evenings become chill the latter should be put on, as colds are often caught by children running barelegged in the evening dew.

High-crowned straw hats with broad rims are the only rational headgear for children in summer.

Many people consider that precautions of this kind are unnecessarily fussy; but it is very much better to be over careful than under careful where small children are concerned.—S. F. Evening Post.

Some Summer Substitutes for Heavy Meat Dishes.

We are all interested in new substitutes for meat, not only because it is summer and a light diet is advisable, but because, too, of the increasing price of all kinds of flesh foods. Accordingly, I will give a few recipes which may be of help to some of the readers of the Household page:

Baked Fish With Cheese.—Have a neat square of fresh fish, lay in salt and water for an hour; wipe dry and rub all over with melted butter and lemon juice; pepper and salt the fish, dredge with flour and bake covered, about ten minutes to the pound; take up then, and sift fine, dry bread crumbs all over it and put dots of butter on top. Set in the oven, uncovered, to brown, after sprinkling three tablespoonfuls of grated English or parmesan cheese over it. This is a very nice company dish and easy of preparation.

Stuffed Onions, Creamed.—Boil large onions until tender, but not broken. Drain, and when cold carefully remove the hearts or centers. Chop three of the hearts fine and mix with them a cupful of flaked cold fish and season to taste. Moisten with rich cream and the beaten yolk of an egg. Fill the centers of the onions with the mixture, put a piece of butter on the top of each, set side by side in a deep baking dish, pour a little milk about them and bake, covered, for twenty minutes. Then uncover, sprinkle with buttered crumbs and bake ten minutes longer. Serve hot.

Peppers Stuffed With Fish.—Trim the stem ends of green peppers so that they will stand up. Cut off the tips and, with a small, keen knife, extract the seeds and the tough fiber. Mince white fish fine, moisten it with a white sauce, season and fill the peppers with this mixture. Stand in the oven long enough to heat very hot, and serve.

Spanish Rice.—Boil one cupful of rice in plenty of boiling water salted; drain and dry off. Chop a quarter of a pound of fat salt pork and fry it in a pan. When it hisses put into the pan two medium sized onions, also minced. Chop two green, sweet peppers, seeded, and mix with the rice, then the pork and onions and enough tomato sauce to moisten the mixture well. Butter a baking dish, add salt and pepper, if needed, to the rice, and put into the dish. Coat the top thickly with fine crumbs and bake, covered, twenty minutes; then brown.

Tomatoes Stuffed With Macaroni and Cheese.—Select large, firm tomatoes, cut off the tops and scoop out the inside pulp, but do not peel. After sprinkling the inside of the tomato shells with a very little salt and pepper, fill them with a mixture of boiled macaroni mixed with grated cheese and seasoned with bits of butter and salt and pepper to taste. Strew a little of the cheese on the top.

Dexter Canapes.—Cut stale bread in one-fourth inch slices, then in oval shapes. Toast on one side and spread untoasted side with anchovy paste. Cover each side with a slice of tomato, cut the same size as the bread; spread tomato with mayonnaise dressing, sprinkle with the yolks of hard-boiled eggs forced through a potato ricer, and then the whites finely chopped. Garnish with a ring of green pepper around outside and a piece of olive and parsley in the center. Arrange for individual service on small plates covered with a lace paper doiley.—Evening Post.

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Cooking Recipes.

Tomato Fig.—Use very small and perfectly smooth yellow tomatoes and to every pound allow one-half pound of coffee sugar. Put the sugar on the stove with just enough water to melt, and as soon as it begins to boil put the tomatoes in whole, with skins on. Draw the kettle back where they will simmer gently. Cook until transparent, about two hours. Skim them out carefully and drain off the syrup. Spread them on platters in the sun, if possible. Sprinkle a little sugar over them. Next day turn and sprinkle with sugar again. Do so for two or three days. When dry, pack into boxes. Seven pounds of tomatoes makes two quarts of figs.

Peach Mousse.—To a pint of ripe peaches, rubbed to a pulp, add 1 cup of sugar. Dissolve a tablespoonful of gelatine in 3 tablespoonfuls cold water and mix thoroughly with the fruit. Whip a pint of cream until thick and stir into the fruit with a few drops of bitter almond or vanilla. Pack in ice and salt and let stand four or five hours.

Boiled Ham.—To be at its best, ham should be cooked slowly and a long time. First cover it with cold water and let stand over night. In the morning wash thoroughly, scrape and trim off the hard skin. Put on to cook in cold water, enough to cover the ham, bring to a boiling point slowly, then simmer (gently boil), until the meat is tender. For a ten-pound ham this will take about five hours. Remove kettle from the stove and allow ham to remain in the liquor in which it was boiled for an hour, then remove the skin and place ham in a dripping pan. Sprinkle with a tablespoonful of granulated sugar, stick in about a dozen whole cloves, sprinkle with fine crumbs and bake slowly for an hour. Slice very thin when perfectly cold; this is good enough for a king. Save every scrap of the ham to use in omelet, as scalloped ham on toast, or any of the many ways in which it may be used.

Tomato and Pimiento Salad.—Here is a very effective salad and at the same time one that tastes good and is easy to make. It is made of strained tomatoes seasoned, then solidified with gelatine and pimientoes, cut fine, added before the tomatoes become too solid. It is molded in cups, turned out on a bit of head lettuce and served with mayonnaise dressing. It is difficult to give proportion because the tomatoes would vary somewhat. In particularly good salad in mind, one-quart of home-made tomatoes, strained when canned, was used, one package of gelatine and a 15-cent can of pimientoes. It served ten people.

Spiced Tomatoes.—To make spiced tomatoes, take 5 pounds of tomatoes, wash and cut into quarters; 3 pounds of sugar and cook together; then add a teaspoon of salt, 1 of pepper, 1 of cloves, 1 of allspice and 2 of cinnamon. Cook until thoroughly done. This is a nice relish for cold meat.

Aunt Cindy was running around the yard in the rear of her cabin seeking to drive into her henhouse a dozen or so of chickens that seemed anxious to go anywhere but in the henhouse.

"Why do you go to all that trouble, Aunt Cindy?" asked a passerby. "Don't you know that chickens come home to roost?"

"Sho', I knows it, white folks," answered Aunt Cindy, "an' dat's de trouble—dey's goin' home to roos'!"

When the boat at the seaside resort was upset and its inmates were thrown into the water a rescue crew started from the pier to save those who were battling with the waves. A frantic man stood upon the wharf and shouted "Save the red-headed man; oh, save the red-headed man!" "Is he your brother or your father?" inquired a sympatheitc bystander. "Oh, no," was the reply, "but he owes me $86."—The Housewife.

A woman teacher was explaining gender to a grade of young children as visitors entered. They begged her to continue, as they would be delighted to hear the children's replies. "Children," she asked, "what is 'girl,' 'woman,' 'man'?" One little hand was so eager, she appealed to the owner proudly. "Well, Artie?" Artie rose to the occasion. "Girls is females, woman's a male, and man's a human bean."—Melbourne Australasian.

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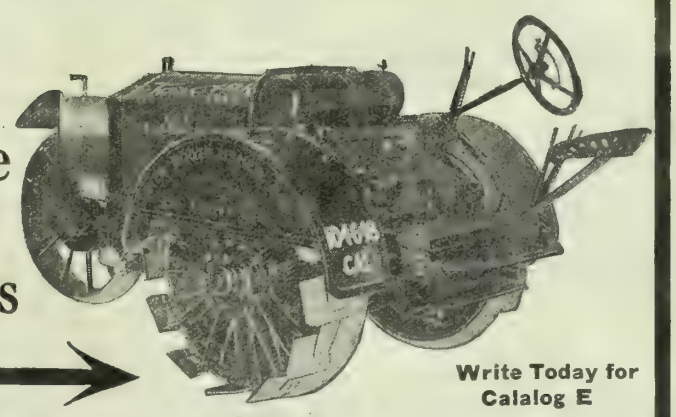

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THE MARKETS.

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Cereals.

WHEAT.

With crops turning out large in many parts of the country, the market continues easy, with a decline locally in both California and Northern Club. Other lines stand as before, but there is not much trading in this market.

California Club, ctl	$1.60@1.62½
Forty-fold	1.65 @1.70
Northern Club	1.60@1.62½
Northern Bluestem	1.72½@1.77½
Northern Red	1.60 @1.80

BARLEY.

Business is still limited, owing to divergent views on prices between buyers and sellers. Offerings are light, with growers holding back their grain, but this has failed to bring any higher proces.

Brewing and Shipping	Nominal
Choice Feed, per ctl	$1.30 @1.35
Common Feed	1.27½@1.30

OATS.

There is no demand of any consequence here at present, and supplies are ample for all current needs. A further decline is noted in white oats.

Red Feed	$1.65 @1.85
Seed	Nominal
Gray	Nominal
White	1.55 @1.60

CORN.

All varieties remain at the old quotations, but the market shows little feature, the movement locally being very light.

Cal. Yellow	$1.55 @1.60
Eastern Yellow	1.50 @1.55
Eastern White	Nominal
Kaffir	1.50 @1.55
Egyptian	1.70 @1.75

RYE.

Desirable lots are steadily held at the recent advance, but there is not much demand.

Rye, per ctl	$1.45 @1.50

BEANS.

After several weeks of dullness, the market has again picked up a little, though the movement is mostly in mixed carloads, with few large sales of any one variety. Stocks of small whites are getting into very narrow compass, and the price has again been marked up rather sharply. Otherwise values stand about as before, and there is no unusual firmness in anything but bayos, which are cleaning up and may be higher in the near future.

Bayos, per ctl	$3.15 @3.25
Blackeyes	3.15 @3.35
Cranberry Beans	4.70 @5.00
Horse Beans	1.90 @2.15
Small Whites	5.50 @5.70
Large Whites	4.50 @4.75
Limas	5.75 @5.90
Pea	Nominal
Pink	3.00 @3.20
Red Kidneys	3.40 @3.60
Mexican Red	3.75 @3.80

SEEDS.

There is no large movement of anything at this season, and values are largely nominal, with no change from old quotations.

Alfalfa	12½@ 14c
Broomcorn seed, per ton	$27.00@28.00
Brown Mustard, per lb	3¾c
Canary	6 @ 6½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

The local demand continues fair, and there has been some export business, though shipments from this port are not heavy. Values are steady at the former level.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.60 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Arrivals have fallen off a little in the last week, though larger than for the greater part of June. Notwithstanding the decrease, supplies have been ample for all demands, and it has been necessary to make some reduction in prices to clean up the amount received. The market was badly overloaded after the holidays, and still lower prices are expected in some quarters. Buying is accordingly rather light. Dealers are working on a hand-to-mouth basis, buying very little in the country at present. Most growers are holding for more than present market values, but in some districts offerings are increasing. A good many growers expect to store their crops for the winter market, and will probably get some advance, though it is doubtful whether the rise will more than cover storage costs. Alfalfa finds a good demand, and many growers are holding for prices above the present range. Offerings are large, however, and with a heavy crop in the State as a whole it is very doubtful whether prices will advance.

No. 1 Wheat, or Wheat and Oat	18.00@19.50
do No. 2	15.50@17.50
Lower grades	15.00@15.50
Tame Oats	15.50@20.00
Wild Oats	14.00@16.50
Alfalfa	12.50@14.00
Stock Hay	9.00@11.00
Straw, per bale	45@ 95c

FEEDSTUFFS.

Values show less firmness than for some time past. Bran and oil-cake meal are quoted lower this week, and rolled barley is expected to drop a little, though it is rather scarce in the local market at present.

Alfalfa Meal, per ton	$20.00@21.00
Bran, per ton	27.00@28.00
Oilcake Meal	32.50@33.00
Cocoanut Cake or Meal	25.00@26.00
Cracked Corn	34.00@35.00
Middlings	34.00@36.00
Rolled Barley	29.00@30.00
Rolled Oats	35.00@36.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Onions are coming in more freely, and river stock, both yellow and red, is a little lower, though some fancy yellow onions from other points bring a slight advance. Arrivals of green corn have been very heavy this week, and ordinary stock is cheaper, though choice lots still bring fair prices. Arrivals of asparagus have been rather light, but all offerings are in poor shape owing to the hot weather, and bring very poor prices. Cucumbers are again lower, and tomatoes are plentiful, but fairly steady, large lugs from the river district bringing about $1.75. String beans and peas have recovered from last week's depression, and some lima beans are bringing good prices. Green peppers, summer squash, egg plant and okra are all plentiful and considerably lower in price.

Onions: New Yellow, sack	60c@ 1.00
New Red, sack	50@ 65c
Garlic, per lb	3@ 4c
Cucumbers, per box	25@ 35c
Cabbage, per ctl	40@ 50c
Carrots, per sack	75c
Cauliflower, per doz	40@ 50c
Green Peppers, box	65@ 85c
Green Peas, lb	2@ 3c
Asparagus, box	40c@ 1.00
String Beans, lb	2@ 4c
Summer Squash, lug box	35@ 75c
Green Corn, sack	1.25@ 2.00
Okra, box	20@ 35c
Tomatoes, box	35@ 50c
Eggplant, box	1.25@ 1.50
Lima Beans, lb	8@ 9c

POTATOES.

Ordinary river stock is cheaper, but choice lots of either old or new stock are held at steady figures, and fancy stock from San Mateo county is fairly firm.

Oregon, ctl	80c@$1.00
New River Whites	75c@ 1.25
San Mateo	1.50

Dairy Produce.

POULTRY.

The market is fairly well cleaned up at the moment, as arrivals from the East have been light the last few days, and supplies from nearby points find a ready market at full prices. Large young roosters are in good demand and bring a slight advance. While the market is in good shape at present, the outlook for next week is uncertain.

Large Broilers, per lb	21 @22 c
Small Broilers, per lb	21 @22 c
Fryers, per lb	22 @22½c
Hens, extra, per lb	15 @16 c
Hens, large, per lb	15 @16 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	10 @12 c
Young Roosters, per lb	22 @25 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.50@ 2.00
Ducks, doz	4.00@ 6.00
Turkeys, live	21 @22 c

BUTTER.

The week opened with a slight drop from previous figures, but the market is firm at present, with values somewhat higher. No great fluctuation is expected, however, as any marked advance would retard the shipping and storage movement, which is needed to take up the present supply.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	27½	—	—	27½	28½	28½
Firsts	27	—	—	27	27	28

EGGS.

Arrivals have been running rather light since the holidays, causing an advance of 1c in extras over the previous quotation, all offerings finding ready sale. The lower grades are unchanged, but firm, with a strong demand for pullets.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24	—	—	24	24	25
Firsts	22½	—	—	22½	22½	22½
Selected Pullets	22½	—	—	22½	22½	22½

CHEESE.

All grades are steady, with no change from the old quotations, the arrivals just about balancing the current demand.

Fancy California Flats, per lb	15 c
New Young Americas, fancy	17½c
Monterey or Jack Cheese	15@15½c

Deciduous Fruit.

The fruit market is in fairly good shape for this time of year, arrivals of several lines being very moderate, and all offerings of attractive quality find ready sale. First-class Longworth strawberries are a little higher, other kinds standing as before, and loganberries bring a slight advance, though blackberries and raspberries are very plentiful and easy. New apples find a very good market, though prices show a narrower range, and very little can be sold over $1.75. Old stock is practically cleaned up. Bartlett pears are a little lower, but find a good demand. Supplies so far have been green. Some lines of cherries are higher, but most offerings are unattractive and move slowly. Apricots are cleaning up well at firm prices, finding a strong demand, and bulk stock sells around $60 per ton. There are a good many poor lots of peaches coming in, and such stock receives little attention, though choice offerings are in demand at an advance. Plums stand about as before, only first-class lots finding much demand, and considerable ordinary bulk stock is offered at irregular prices. Figs are offered in large quantities, but are in demand at satisfactory prices. Cantaloupes are fairly firm, with offerings less excessive than before, and watermelons move well at the old prices. A few huckleberries are being sold at high prices.

Loganberries, chest	$ 3.00@ 4.50
Blackberries, chest	2.00@ 4.00
Gooseberries, lb	7@ 8c
Raspberries, chest	4.00@ 6.00
Currants, drawer	75@ 85c
Strawberries:	
Longworth, chest	5.00@ 8.00
Other varieties, chest	3.00@ 6.00
Apples:	
New Gravensteins, box	1.25@ 1.75
Astrachans	1.15@ 1.75
Pears, Bartlett, box	$ 1.25@ 1.75
Cherries: per box	60c@ 1.00
Bing, in bulk, per lb	9@ 10c
Black, lb	5@ 7c
Royal Ann, lb	7@ 10c
Apricots, crate	85c@ 1.00
do lug box	90c@ 1.00
Peaches, box	75c@ 1.00
Plums, crate	75c@ 1.00
Figs: Black, box	85c@ 1.00
Cantaloupes, large crate	2.50
Watermelons, per dozen	1.50@ 3.00

Dried Fruits.

The dried fruit market locally remains quiet, though there is a little more activity in the country. Trade everywhere is somewhat retarded, however, and while buyers are making better offers for some varieties, growers generally are disposed to hold off. Business in general is curtailed by the general financial depression, but packers feel fairly confident of a good movement in the near future. Notwithstanding the general shortage of apricots, packers show some hesitation about paying present prices, though most growers are taking a firm attitude. Prices for prunes, both old and new crop, have been slightly advanced, and some business is reported at these figures. New crop peaches cannot be bought under 4½c, and many growers refuse to sell at this price, though packers are taking little interest. Better offers are also reported for new pears. Raisins are quiet, but firmly held here, though some low quotations have been reported in the East on old-crop goods. The New York Journal of Commerce says: "The demand for spot prunes is moderately active, but transactions reflect only the present small needs of consumption, which, however, are more pressing than usual at this time of the year, owing to the short supply and relative high cost of most fresh fruits. Future prunes are not getting much attention from the distributing trade at this end. Packers as a rule are not trying to force business and hold 1913 40s to 60s on a 4½c f.o.b. four size bulk basis. From at least one quarter 40s to 70s Santa Claras for October shipment are offered on a 4¼c four size bulk basis f.o.b. Coast. Apricots on the spot meet with a steady jobbing demand and are held firmly up to the previous quotations. Futures are strong, but do not seem to be getting much attention from local distributers. Peaches, both spot and for future delivery, are slow of sale as yet."

Evap. Apples, 1912 crop, per lb	5 @ 6 c
Apricots, 1913	11 @12 c
Figs: White, 1913	3 @ 3½c
Black, 1913	2½@ 3 c
Calimyrna, 1913	4½c
Prunes, 4-size basis, 1912	3 @ 3¾c
do 1913	4 @ 4½c
Peaches, 1912	3½@ 4½c
do 1913	4½c
Pears, 1913	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912	3 c
do 1913	3½c
Thompson's Seedless, 1912	4½c
do 1913	4 c
Seedless Sultanas, 1912	3½c
do 1913	3 c

Citrus Fruits.

The Eastern auction markets are still paying high prices for fancy oranges, but as there have been considerable poor grades shipped the price varies greatly. At New York, Monday, July 7, valencia oranges averaged from $7.05 down to $1.55 per box. Good fruit averaged better than $5 per box. The same condition was found in other fruit centers where poor fruit seemed plentiful.

Lemons are a trifle lower in price, as dealers will not buy freely at the high rates prevailing, and then, too, there has been lots of foreign fruit offered. Prices on good lemons averaged around $7 and $7.50 per box in the East.

Shipments have eased up some and the total number of cars of oranges sent East to July 7 were 11,912, and of lemons 1787 cars.

The San Francisco citrus fruit market shows little feature, the demand for oranges being moderate but fairly steady. Choice valencias are quoted a little lower than last week. Lemons are a little easier, with considerable ordinary stock selling around $3 to $5 per box, though lemonettes are firm, i nthe absence of limes from the market.

Oranges, per box—	
Valencia	$4.50@ 5.50
Grapefruit, seedless	2.50@ 5.00
Lemons: Fancy	7.00@ 9.00
Lemonettes	6.00@ 7.00
Limes	Nominal

Nuts, Honey, Hops, Etc.

NUTS.

There is nothing new in this line, the few scattered lots of old stock being closely held, while values for the new crop have not yet been established.

Almonds—	
Nonpareils	17½c
I X L	16½c
Drakes	12½c
Languedoc	11½c
Hardshells	8 c
Walnuts, 1912 crop—	
Softshell No. 1	16 @16½c
Ne Plus Ultra	15½c
Hardshell No. 1	15 @15½c
No. 2	10½c
Budded	17 c

HONEY.

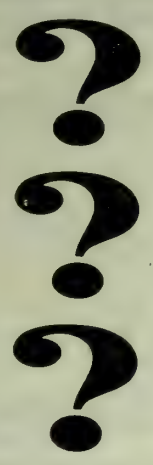
Arrivals are still rather light, and there is a strong demand for white and water-white grades of both comb and extracted, which sell readily at full prices. Ordinary and dark stock, however, is very hard to sell.

Comb, white, new	15 @17 c
Amber	11 @12 c
Dark	9 @10 c
Extracted, white	8 @10 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Values show no change, the market being dull, though the few local offerings are steadily held, and there is little coming in.

Light	30	@31 c
Dark	26	@28 c



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HOPS.

Occasional sales are made at about the prices quoted, but so far there has been no great activity, and no heavy movement is expected for several weeks.

1912 crop	12½	@16 c
1913 contracts	13	@15 c

Live Stock.

Light and medium calves are held a little higher, and suckling lambs, both live and dressed, have advanced. Live wethers and ewes, however, are easier. Hogs are firm at the recent advance, with rather light arrivals.

Grass-fed Cattle—	
Steers: No. 1	6¾@ 7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	5¾@ 6 c
No. 2	5¼@ 5½c
Bulls and Stags	2½@ 4½c
Calves: Light	6¾@ 7 c
Medium	6¼@ 6½c
Heavy	5 @ 5½c
Hogs: Grain-fed, heavy	7¼@ 7½c
150 to 250 lbs	7½@ 7¾c
100 to 150 lbs	7¼@ 7½c
Prime Wethers	4½@ 4¾c
Ewes	3¼@ 3½c
Lambs: Suckling	5½@ 6 c

DRESSED MEATS.

Steers	12 @12¼c
Heifers	11 @11½c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	10½@11 c
Ewes	9 @ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	12½c

WOOL.

A large part of the spring clip is still held in storage, and while occasional sales are made, the local buyers are paying little attention to offerings in the country.

Spring clip:	
Southern mountain, free	8 @11 c
Northern, year's staple	13 @14 c
Humboldt, year's staple	18 @19 c
do short	13 @14 c

HIDES.

The hide market shows little feature, being extremely dull, with an easy feeling in regard to prices in most lines.

Heavy Steers, over 56 lbs.	14 c
Medium	13 c
Light Steers, under 48 lbs.	12 @13 c
Heavy Cows, over 50 lbs.	12 @13 c
Light Cows, 30 to 50 lbs.	13½c
Kip	14 @15½c
Veal	17 @18½c
Calf	17 @18½c
Dry—	
Dry Hides	24 @25 c
Dry Kip, 10 to 15	24 @25 c
Dry Veal, 5 to 10	29 c
Dry Calf, 7 down	29 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25@ 50c
Dry	75c@ 2.00

HORSES.

The regular midsummer dullness prevails in the Ean Francisco horse market, and no improvement is expected until the beginnig of the fall season. The amount of stock needed here is limited, and feed prices are too high to encourage buying of a speculative nature. There is practically no demand except from large draymen, and only heavy stock in first-class condition is salable at anything like satisfactory prices.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

Bulletin No. 9 of the California Citrus Protective League has just reached us. The bulletin is made up of a summary of the lemon industry in this State, and is a very valuable addition to our citrus literature. Copies of the bulletin may be had by writing to F. O. Wallschlaeger, secretary, Los Angeles.

The Pioneer Nursery of Monrovia has just issued a new catalogue and price list which is well worth sending for by intending tree planters.

Note the ad in another column of the California State Fair. The new secretary, Mr. McCarthy, is doing everything he can to get together a fine list of exhibits in all lines, including horticulture, agriculture, live stock dairy, poultry, implements, etc. Every California farmer should feel it his duty this dry year to save his big "pumpkins" and exhibit them. The Fair officials need your help this season.

We want every subscriber to the RURAL PRESS to read the articles by our editor, now in Europe. Prof. Wickson is giving information of great value to every farmer, and now is the time to study the financial plans that have done so much for European agriculture. When the commission reaches America, in about a month, and makes its report, every farm owner in this country should be prepared to act upon it. The government will help to establish a system of co-operative agricultural banks if the people want it, and if you are ready to do your share, the work may be quickly accomplished.

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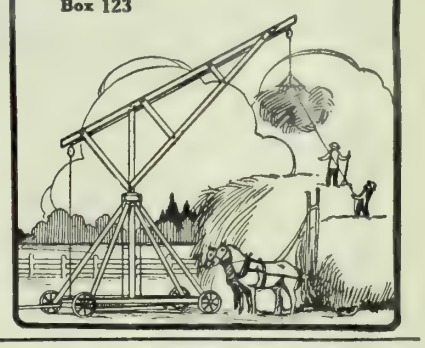

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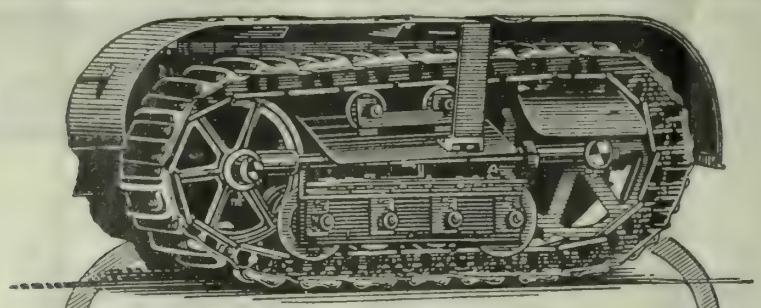

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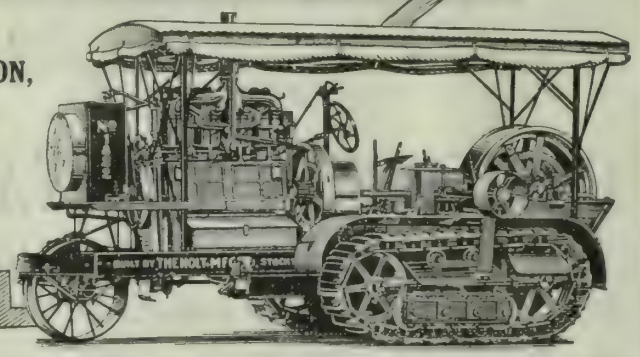

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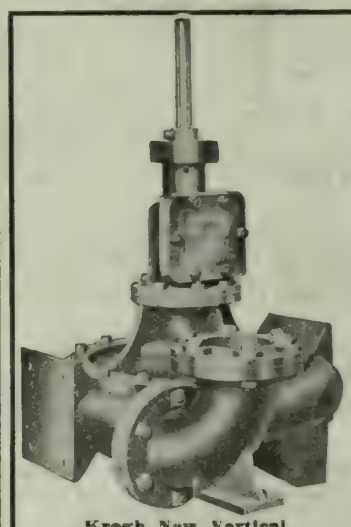

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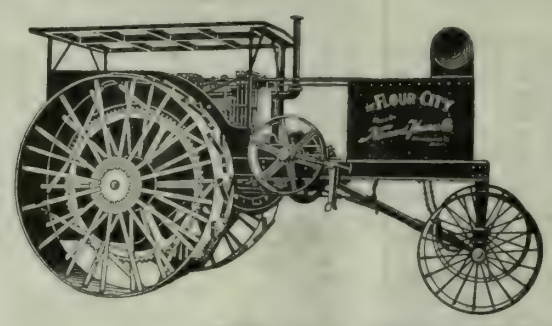

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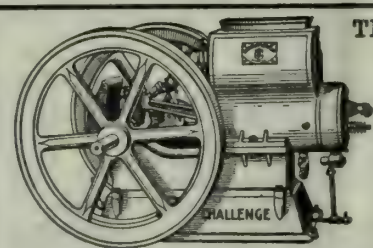

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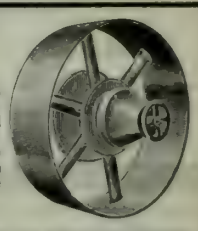

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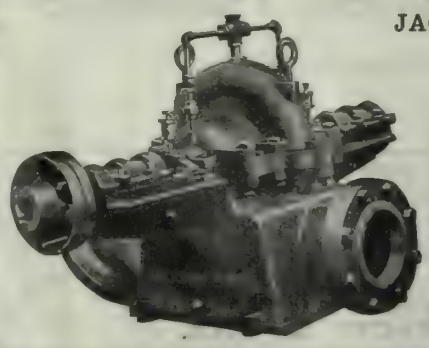

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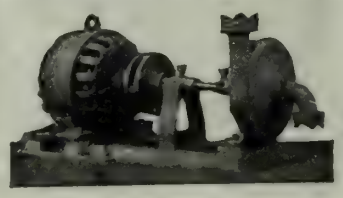

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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 3. SAN FRANCISCO, SATURDAY, JULY 19, 1913. Forty-Third Year.

PRUNING THE PRUNE.

[Written for the PACIFIC RURAL PRESS by LEONARD COATES.]

Readers of the PACIFIC RURAL PRESS may remember that, many years ago, and on several occasions since, I have always questioned the wisdom of the prevailing idea that the French prune tree (to give it the name by which it is most commonly known in California) should receive little or no pruning. The fact remains that this is the generally accepted theory and practise.

There is absolutely no sound reason for it, though there are several excuses offered for adhering to this method of treatment. Among these is the fact that the French prune tree will grow rapidly and bear many good crops of fruit if never touched with pruning shears or knife. So will any other fruit tree, of whatever variety, but the French prune is the only fruit of which size is not an essential factor commercially. In other words, a crop of prunes running 60-70 or 70-80 on a 4c. basis is profitable, and which will often be the average size in an average orchard. No other fruit woud be salable without attention being given to the operations of pruning or thinning, or both: it is for the grower to figure how much greater the profit if fruit is larger, and crop regular.

It is also alleged that the French prune tree is injured by being pruned; that the extra labor involved would be too expensive, etc.

French Method, Short on Looks but Long on Production.

A California Prune Tree, Fine Looking but Wrongly Shaped.

The accompanying photographs show the French prune tree as grown in California and as grown in France, both of about the same age. The former was photographed late in June, and the latter about the first of May, during my recent trip to France. These examples are so striking in contrast that, allowing for some modification in treatment due to environment or physical conditions, no one could say that both are right.

The uncomfortable fact also stares one in the face that the specimen with its enormous mass of wood and leaves has no crop, and rarely bears a crop. When it occasionally happens that an orchard of such trees does produce a crop, a small fortune must be spent in props to prevent the breaking to pieces of the trees.

On the other hand, the specimen which is annually pruned always bears a crop, which fluctuates only with weather conditions. The size and quality also are good, and there is never a broken branch or need for props.

Of course, this should effectually do away with the prejudice existing in California against pruning the prune tree.

In France the trees are annually pruned, the new growth being shortened and surplus wood cut out. It rarely happens that any large limb is removed. The general shape is cup-shaped, or with an open center, allowing of free circulation of air and plenty of sunlight. The summers are very warm in the Lot et Garonne, although rains occasionally occur. The trees are vigorous, but do not make so much annual growth as in California. Suckers on main branches are removed almost as soon as they appear. The trees are planted either in small orchards, or, as seems a commoner custom, in rows about 100 ft. apart and 20 to 24 ft. in the row. Grape vines are often planted between the trees, and a strip of five or six feet plowed around them. The remainder of space between the rows is used for some other crop. The soil about Villeneuve is a clayey loam on the hillsides, and blacker in the valleys on level land. The conclusion arrived at is that the French prune tree in California may with impunity receive our annual pruning, consisting of shortening in of young growth and cutting out of surplus wood, and if this results in the building up of a commercial tree which will bear fair annual crops of good-sized to large fruit, there would be an enormous profit on the extra work entailed. And I cannot see that

(Continued on Page 59.)

Pacific Rural Press

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., July 15, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.14	.11	68	58
Red Bluff	.00	.00	.00	104	62
Sacramento	.00	.00	.00	104	54
San Francisco	.00	.00	.00	90	50
San Jose	.00	.00	.00	104	50
Fresno	.00	.00	.00	108	64
Independence	.06	.06	.00	102	54
San Luis Obispo	T	T	.01	96	56
Los Angeles	.00	.00	.00	90	62
San Diego	.00	.00	.00	94	64

The Week.

For the second week running, Europe has to take a little space right here, not that Europe is so attractive as all that, but it seems to be firing some lessons at us just now, and when a person gets so that he cannot learn from his competitors he is in a bad way. Californians are so used to hurrahing for California, and in which hurrahing they are justified, that sometimes they forget that California by nature and the use of California by her children are sometimes two different things. The reason for our state of mind is found on the front page. The illustrations there are strikng enough, and the reading matter greatly enlightening. Fortunately the writer of the article came in with the manuscript instead of sending it by mail, and the more of the information he told us that appears in these columns the better. The French tree looks scrubby and unthrifty. It is not so, but a fine grower and a better producer. The photograph happened to be taken a little early in the year, that's all. It is not an apricot tree, in spite of its shape, but a prune, and it is proper pruning that makes it look like an apricot. Those and sister trees outbear California trees, according to Mr. Coates, by a big margin. Every year they have at least a fair crop, for when a heavy frost comes, and frosts are more frequent in French prune districts than here, it finds the buds so strong that a lot of them survive. Moral: when you get strong buds, you get frost resistant buds, and that has long been known here. Further, the prunes run approximately 30 points larger than the California average, and that is a cent and a half on the price the first rattle out of the box. Furthermore, the trees are widely separated, not huddled together, and by pruning are so open and exposed to air and sunshine that neither moss nor scale dare make trouble nor expense for owners. Part of it is having the trees separated from each other, and part the open pruning, the same kind that we have on peaches, apricots and every fruit but prunes. Then on top of the pruning is the processing. California prunes bring a lower price than French prunes, but are as good or better by nature in similar sizes. The answer is processing, which is given the best possible attention, so that a person can find French prunes selling for as much as 60 cents a dozen, retail. There is more on prunes from Mr. Coates and a few little things like that show what there is to learn. Our California tree in the illustration is a beauty all right, but "beauty is as beauty does," and evidently if its appearance could be made over, the State would appreciate the change.

Out in the World.

[BY THE EDITOR.]

[In our last issue Professor Wickson gave detailed descriptions of the operation of Raiffeisen institutions which are organized among the peasants and small farmers of European countries for the purpose of accumulating funds to be loaned to borrowers of these classes, to promote production and prosperity. These are the small rural banks which occupy a most important place in the modern development of agricultural credit in Europe. In this issue attention is paid to organizations connected with banks which minister to co-operative purchasing for direct trade and reducing the cost of farming requirements of all kinds.—ASSOCIATE.]

Although we are by no means done with banks, for we have others in our note-books which may be more significant in their American applicability than any we have thus far commented upon, we must turn aside this week to sketch co-operative associations for purchase of supplies without intervention of middlemen's profits. Such associations are nearly always associated with banks, and they mutually promote each other. For example, co-operative associations soon found out that old-fashioned banks charged too much interest on the loans which purchase and sale associations had to make, and so they organized banks of their own and spread their nets for deposits of rural savings, and immediately found these nets well filled, as has been shown in preceding notes on rural banks and their experiences. On the other hand, co-operative banks thus established soon acquired an appetite for still more working funds which they could lend to the growing demand for money, and so they began aggressive work in organizing more associations which in turn established more banks to organize more associations to get more money to buy more goods for more members. In a word, agricultural co-operation has grown in Europe, just as the development of our great Middle West proceeded by agricultural activity in an endless chain—growing more corn to feed more hogs to get more money to buy more land to grow more corn, etc. Thus it seems to have come about that in farming villages, of which one can often see several at once through the car window, banks are as sure to be found as bakeries—as we noted in a previous letter.

Banks Which Are Not Parasitic Upon Prosperity.

These abundant banks are not parasitic upon the people or their organizations, as one might apprehend from their luxuriant growth. Quite the reverse: they are the most remarkable instance of economic or industrial symbiosis we have ever seen. They do not live upon the people and gather the people's substance into their own: they live with the people and for the people: they are of the people and by the people, and the stockholders, when there are any, get interest just as depositors do, but no dividends whatever.

We are not writing this time about banks, but it is necessary to recall these fundamental facts that these peoples' banks and rural banks (and by whatever name we may call them later) are the real strength of co-operative purchasing and selling organizations: they live with them and for them in the combined effort for protection against financial and commercial exactions. And the banks and organizations, working together, not only enhance individual prosperity among those who participate in them, but they build up remarkable national strength. While we were in Rome, a leading statesman said this:

"Before war broke out with Turkey the Italian treasury was putting money aside and was in a position to invest its own savings! But what a wonder that after the war broke out the Italian finance and economy should have proved strong enough to meet the contingency without having recourse to public loans, and particularly without borrowing money abroad. * * * Our adversaries abroad cried out ironically that this was a miracle: as if war had brought us wealth. There are no miracles in matters of finance. * * * The credit of a state is based upon a sound finance which tends to direct capital toward agriculture and industries, thus lowering the rate of interest on money."

Thus it appears that in a country where for more than 2500 years the surplus earnings and enforced labor of the peasant classes were expended upon grand and beautiful, but otherwise largely useless, buildings and monuments, these great sources of wealth are now yielding strength to the nation because producers are enabled by co-operation to defend themselves from exploitation by greedy financiers and traders who demand more than they deserve. The modern oppressors of nations are not conquerors and subjugators: usurers and unfair traders have taken their places. As between the oppressors of old and modern times, possibly those of old were really, in one way, better because the grand monuments of ancient times are nobler and more inspiring to mankind than the colossal fortunes of today. Civilization made the ancient oppression impossible: co-operation, the highest form of civilization, can make financial and commercial oppression impossible. And so it comes about that Italy in her present phase of development is building national strength upon the basis of widely distributed industrial prosperity and contented citizenship—judging citizenship, however, not by American standards, as we have previously suggested.

Purchasing Associations in Italy.

We come now, after indulging in too many abstractions, to the fact that Italy has literally thousands of co-operative purchasing associations organized by farmers to buy machinery, seeds, fertilizers, live stock, and household requirements of all kinds, at lower prices than they could be formerly obtained from local traders. We attended one day what might be called a district convention of representatives of 700 such associations in a city in northern Italy. Of this particular brand of purchasing association there are over 1500 in Italy, and hundreds more of similarly organized associations with somewhat different names and arrangements—all co-operative and rebating profits to members except a small percentage which is retained in reserve funds which constitutes the capital in their business operations. Though this percentage is very small, the aggregate accumulated capital is great. The 700 associations, which we saw represented in the convention, which filled a large opera house, have an aggregate of 125,000 members, a capital and reserve fund of $2,600,000, and a business transacted during the last year of

$20,000,000. Some of these associations are very small; some are large, covering considerable area and selling goods to an annual value of $600,000 each; some have only twenty or thirty members, others from two to three hundred. Including the federation of 700 such societies mentioned, there is a total membership of all co-operative purchasing associations among farmers of not less than 250,000. Before these associations were organized there was an understanding among manufacturers, importers, and dealers to keep prices of farm supplies high: in fact, such oppression forced organization among farmers. They have succeeded in reducing prices, in preventing combinations, and in regulating trade; for now the manufacturers compete with each other for their custom, for they buy in large quantities for distribution to small buyers. They sell to members and to others, but members only share in the distribution of profits: in some cases they sell at lower prices to members than to others, to induce larger membership.

After the convention we visited the headquarters of the federation of the 700 associations which act as a unit in some of their affairs. It was also the headquarters of the People's Bank which is the financial core of the oldest purchasing association of its class, and the convention to which we have alluded was called to celebrate its fiftieth birthday. It began in 1863 with a subscribed capital of $5000: its present capital is $94,200, and its reserve fund $60,000. Thus it has grown in spite of the fact that it is not intended to make money beyond its own actual needs. It has $1,600,000 in deposits, and its general turn-over of business during the last year was $12,000,000. But here again we have skidded into banking: it is hard to discuss any co-operative thing without doing it.

A Corn-Cake Factory.

In order to seize hold upon a concrete thing, we take note of a visit to a co-operative corn-cake factory which belongs to a purchasing association. Its purpose is to prepare Indian corn for feeding to live stock. The operation is to coarsely grind the corn, de-germing it also; to grind the rest, and then to run the grist into hydraulic presses to extract the oil, which is sold to soap-makers, while the press-cake is ground into meal for the stock feeders. We did not have time to inquire closely into the wisdom of torturing good feeding corn in that way, nor what the stock thought of stuff which looked mightily like breakfast food. We were studying institutions, not products. The concern had an output of corn oil and made from 12,000 to 15,000 quintals of corn cake meal. The factory had a capital invested of $20,000, on which it paid 5% interest. Its net earnings are divided into three parts: one for a sinking fund to cancel its obligation; another distributed among the members of the society, and the third is pro-rated back to the purchasers of the stock feed. The stock of the concern is at $5 per share, and no one can own more than 20 shares. The factory is operated by a board of honorary directors chosen by the society, and their liability to the society is unlimited. How they can get directors to serve without pay and each of them liable for the losses to the full amount of his earthly possessions, is the question which always stumps us. When we ask about it, we are told that there are no losses and never have been any, and so the question seems to them impertinent. The factory is operated by eight men working in two 12-hour shifts at 80 cents per day. When asked if these men shared in the profits of the concern, he took it seriously and we had to fall back.

Nearby there was a fertilizer factory, also belonging to the society. The chief function of it was warehousing fertilizers bought in large quantities for small sales, and in preparing mixtures thereof for individual orders. In the trade of these concerns, small farmers are in greater number, but their purchases aggregate less than the orders from large farmers.

Both these little concerns are but typical of hundreds dealing in all kinds of farming requirements and doing a certain amount of manufacturing as the nature of the case may demand. The testimony was clear that farmers helped themselves by operating them.

Co-operative Purchasing in Hungary.

As in Italy, the organization of farmers in Hungary for purchase and distribution of farm and home supplies is widespread, and Hungary has perhaps even a larger combination of local societies in a central agency than Italy has. For example, in Budapest we devoted a couple of hours to wandering about in a great four-story building filled with all kinds of merchandise collected to fill orders from farmers through their village societies. Goods were systematically classified as in a fully developed American department store, although the merchandise was more clearly of a useful than of a decorative quality, even if we did find one corner in which there seemed to be miles of ribbons and acres of very gay dress-goods. For the most part, however, the supplies consisted of cords of heavy shoes of wood and leather, of coarse clothing for field hands, of caps and hats beyond measure. As we tried, chiefly by sign language, to express our admiration at such a grand accumulation of useful farming supplies, and to indicate the fact, by reference to a world map, that we had come all the way from California to admire the co-operation of Hungarian farmers, our guide caught at the name "San Francisco" on the map, and exclaimed: "Ja! ja! San Francisco macht sehr gut overalls." It was an honest tribute to our world-beating copper-riveted creations, and we exploded in such German as we could command in appreciation of it. This leads us to remark that all along the line in South European countries we found American agricultural machinery and supplies in great demand, and a large part of steamship cargoes to Mediterranean ports consists of such merchandise. We saw American flags in many places floating over the European agencies of American manufacturers in these lines. It gives the peasants additional evidence that America is the place from which all good things flow, and our producers no doubt find dealing in bulk with the organizations of European purchasing farmers of great advantage over the old trade with grasping dealers in imported goods. The benefits are mutual, and the trade expands upon the basis of larger sales on fairer margins of distributive profit.

But to return to the great purchasing establishment we visited. We found that over 1300 local societies traded with, representing about that number of farming villages. It started in 1898 with a capital of $15,000: it now has a capital of $400,000: it began with 17 societies and did a business of only about $9000: it now has 1300 societies and did a business last year amounting to $5,602,761. It has mills of its own for finishing raw materials which need grinding, all the way from coffee to paint: it has its own cordage factory and box factory, and it undertakes to do benevolent as well as business things, thus embodying the general European idea that co-operation must rest upon a foundation of beneficence.

We have noted the greatest thing of its kind in Hungary, but by no means all of it. There are many non-organized co-operative purchasing establishments, as they are called, and it simply means that they are not collections of societies but of individual members. There are many such. The oldest, perhaps, is one organized in 1891, which now has 1864 members and did in 1912 an aggregate of transactions of $4,810,000. It is a large land-owners' affair and did business in grain, forage, seed, wine, breeding animals, machinery, and supplies of various kinds. It also has a co-operative swine-fattening annex, and an insurance department. Thus the large farmers help themselves just as small farmers do.

Having dealt mainly with the large, collectively and singly, we note now a visit to a small affair —but this, too, is large in the eyes of the little community of peasants in which it is situated. It is the community Totmeyer, half way between Budapest and Vienna, and consists largely of peasants renting the lands of a large private estate. Under the leadership and constant coaching of the village priest, these people have maintained for the last fifteen years three associations: a farmers' club, a purchasing association, and a tiny little bank. Four years ago the landlord, with the assistance of the Government, built a "Peoples' House" in the village, in which their three societies are lodged with very attractive social adjuncts for the better life of the villagers. The building cost $10,500. It is of concrete and would cost twice as much in California. It is a general neighborhood attraction, for the Artisans' Club and the Gentry Club also use it for their meetings. It looks like a forgetfulness of class feeling which is almost ideal, but we are not on that line. Present interest lies in the fact that in this little co-operating village the rural bank has 368 members owning 452 shares of a par value of $10 each. It has savings deposits of $18,400, a reserve fund of $1051, and it made a turn-over in 1912 of $25,100. The purchasing society has 77 members, with a share capital of $900, did business to the amount of $10,500 last year, and has a reserve fund of $200. It is operating, of course, with some money from the rural bank, for it runs a butcher-shop and a bakery, selling to all who come, paying interest on its debts, and putting a few dimes in the reserve fund now and then, for it does not desire to pay its shareholders anything more than 6% interest on what they have paid in. We have seen nothing thus far which seemed to make more for the comfort and content of a little community than this Peoples' House and its activities. It delighted them also that the friends from far-away America should come to see it and to become acquainted with them. They gave us a great feast in the garden, they danced for us, and sang folk songs, and showed us in many other ways how happy people can be who are working together for the success of all.

Co-operative Buying in Austria.

Passing from Hungary to Austria proper, we found Vienna well occupied with central establishments representing the rural districts in co-operative buying and distribution of farming requirements. Vienna has some phases of centralization in the products trade, in the handling of the rural meat and milk supplies from the country, which impressed us as possibly devised for control in the interest of the Government or of rich exploiters, but we did not have time to verify the suspicion. It is perfectly possible, of course, to steal the livery of co-operation to serve the devil of monopoly; but that is true of all good things perhaps. Aside from such questionable

combinations, there is widely prevailing and genuine co-operation to get the farmer nearer to the first cost of what he needs in his business and in his household.

Austria has a full outfit of what are called Central Co-operative Associations which give attention to purchase and sale as well as to credit operations. Seven of these are largely developed in as many districts. How many local village societies buy through these agencies we do not fully know, but the fact is that there are over 8000 Raiffeisen banks, with more than a million members, in Austria. Seven thousand, one hundred and ninety-seven of them reported in 1910 a membership of 944,526 members, and in 1913 there are certainly not less than a million of them who have the machinery for wholesale buying for distribution to individual purchasers. All these people are then in shape to do without paying retailers' profits if they so desire. Probably, however, quite a number of them are like American farmers, who prefer to shop for themselves at the old-line stores and listen to the tales of dealers who can so easily explain why they ought to charge several times the wholesale price of an article when they supply a retail buyer. In spite of this, the purchasing of supplies through their own credit associations, and not from retail dealers, constitutes one of the clearest advantages realized by Austrian co-operators, and they have become so strong and capable of such large orders that they no longer find any hesitation among manufacturers to prefer co-operative societies to older agencies for distribution to consumers.

Of the relations of this new way of trading, this note is taken from an Austrian publication prepared to serve the American inquiry:

"The identical disadvantages to which farmers ordinarily were subjected in borrowing money existed also in their purchases of merchandise. But here again the co-operative societies intervened with a helping hand. Just as credit societies represent a strong and solvent debtor who can obtain loans on easy terms, the purchasing co-operation represents a strong and competent buyer to whom lower prices are gladly offered because his custom is highly appreciated. And inasmuch as co-operative purchases, as a rule, can be made without investment, the Raiffeisen societies can therefore easily assume the purchase of articles for agricultural use."

This conclusion is amply justified by long experience in Germany, of which we hope to write on some later occasion; for in Germany the practice is older and larger than in other countries. The reason why the local societies can buy immense quantities of goods "without investment" as mentioned above, is because they do not usually undertake to become storekeepers. They receive orders and fill them, and the purchasers either pay cash or discount the bills at a very low rate with the rural banks, or with the old-line savings banks, which, as we noted on a previous occasion, are now very keen to get good short-loan paper (a year or less) at 3½ to 4 per cent, and the society can charge one-half of one per cent for its services in handling the orders and the goods. This, of course, does not mean that purchase and distribution can be done without use of capital. It only signifies that the operation has rendered capital abundant and available.

This method of trading is saving European farmers millions of dollars every year. All farmers in the world can do the same thing in the same way—that is, by being their own bankers and distributers. The question still remains, however: Will they do it?

The Care of Lemon Trees.

[Written for the PACIFIC RORAL PRESS by J. E. ADAMSON, Pomona.]

A correspondent of the Rural Press asks whether "There is any better way to care for lemon trees, than to fertilize, irrigate, and cultivate them the same as orange trees?"

So far as the three points mentioned there is not much difference between the care of the two varieties of citrus trees. The trouble with the question and the answer is that there is no method of doing any one of these necessary things which can be said to have the unanimous approval of even the best of our growers.

On a given soil there is not much difference in the treatment of lemon and orange trees and what will produce results in one will produce equally good results in the other so far as these three cardinal points are concerned. There seems to be, however, a great misunderstanding of the real functions of the various operations in the care of trees.

Irrigation. Trees have the feeding roots well below the surface and should not be irrigated like the shallow rooted plants, therefore the water should be got down as deep as possible and wet as little surface as possible. The method of doing this will vary with the various soils, but there should be as few furrows used as will put the water into the subsoil. And don't let the water run off the place, as there is the direct loss of the water and the other losses, such as washing of the soil and carrying off of plant food in the water.

Cultivation. Cultivation is to bring about two principle results, viz., the production of a dust mulch, to delay drying of the soil, and also to let the air into the soil. There is also the use of the plow to turn under vegetable matter for the production of humus, and the introduction of plant food to the region near the roots of the trees. The last use, which seems to be considered by some the prime one, is to give the ground a good appearance.

Don't use a plank smoother on your orchard, unless it is needed to smash clods, and if used, follow it with a good cultivation to leave the surface loose.

Fertilization. This is one factor in the care of lemon trees which will vary somewhat from the treatment of orange trees, as the lemon is a vigorous grower and will therefore use a greater amount of food.

Fertilizer is not, however, to be thought of, as only to be the various chemicals sold for fertilizers. Our soils are mainly deficient in humus and nitrogen, next comes phosphorus, and lastly potash. Where water is reasonably abundant, the first two elements can best be secured by the growing of cover crops. Do not expect, however, to get much humus, if the green stuff is turned under while the vines are soft and easily rotted. Early plowing of cover crop will give the maximum of nitrogen for immediate use, but the minimum of the more valuable humus. A happy medium will be found by leaving the plowing as late as the ground can be handled to good advantage. The discussion of the humus question leads to another phase of the lemon industry. It is necessary to prune the lemon tree to keep the top in good shape to bear as many lemons as possible in the shade, as the best lemons are picked when the color is a silver green, and this cannot be had when the fruit is exposed to the sun. This pruning of a naturally vigorous grower results in a continuous growth of suckers which must be kept out of the tree if fruit is to be produced.

Many growers seem to forget that this wood contains nearly all the plant food used in growing it and haul the brush off and burn it on vacant land near the place. The more thoughtful growers have seen the loss thus entailed and have for some time practiced the cutting of the prunings into short lengths, scattering them on the land to be plowed in and return to the soil all the plant food they contain, thus making available a good source of humus.

The care of either lemon or oranges is not a question to be discussed offhand, but presents a large field for careful study in the light of knowledge of local conditions.

PINES AND PINE PRODUCTS.

To the Editor: Is Jeffrey pine what is usually called Bull Pine in the foothills of this State? Is the product of the Jeffrey pine known as Heptane a valuable article?—E. L. S., Varain.

Prof. W. L. Jepson, of the Department of Botany, University of California, answered the question regarding varieties of pine trees as follows:

The Jeffrey Pine is not the Bull Pine of the foothills. The Jeffrey Pine grows at high altitudes in the Sierra Nevada, usually 6,000 to 9,000 feet. Its needles are in 30. Its cones are 5 to 8 inches long and when open the scales spread almost horizontally. Its trunks are rusty or winered in color and its foliage branchlets when bruised have an odor of orange. It is likely to be confused only with the Yellow Pine which is a tree of lower altitudes and has cones half the size with ascending or more nearly erect scales.

The remainder of the question regarding heptane was answered by Dr. Blasdale of the Department of Chemistry of the University, who states that this product can be secured from both Jeffrey and Bull Pine, but that it is also present in large amounts in kerosene. It is not considered to have any special value as a medicine, for which it was once exploited and its value otherwise is so small to make its cost, as taken from pine, prohibitive.

SCALE ON APRICOTS.

To the Editor: Would like to know if San Jose scale on apricots is easily eradicated, also quarantine regulations concerning fruit thus infected?—S. L. W., Berkeley.

You evidently are mistaken as to the variety of scale on the apricot trees. San Jose scale is so held under by parasites in California that it gives very little trouble and requires no control methods that would not be given other insect pests or diseases anyhow, and besides is practically never found on apricot trees. The most common scale on apricots, the brown apricot scale, is also usually held in check by the comys fusca, which is as widely distributed as the scale itself. You very probably need not worry about the scale from quarantine standpoint or otherwise. If you just have to treat the trees for the scale and no parasites are around, you can spray in winter with crude oil emulsion. If some scales are punctured or have a black spot on top the comys fusca is busy and you probably will be safe enough without doing anything.

SMUT OF WHEAT.

To the Editor: What is the cause and cure, or prevention of, smut in wheat?—C. A. T., San Francisco.

There are two smuts of wheat, the closed smut and the loose smut, the main difference being that in one the head remains in a rather firm condition and in the other it scatters out, leaving the head empty. There is no cure, though prevention can be accomplished by treating the seed. This should be soaked for ten minutes in a solution of one pound of bluestone to 5 gallons of water, or in 1 pint of formalin to 30 gallons of water. The seed should be soaked long enough to get every grain thoroughly wet and then immediately taken out. If not planted at once the grain must be dried before storing. Plant a little more seed after this treatment than would be used with untreated grain. Loose smut alone is more successfully controlled by the followng seed treatment: Soak in cold water for five hours. Then soak in water at a temperature of 125 degrees F. for 15 minutes. The proper temperature must be carefully maintained to make this treatment successful, but it is not usually necessary in California.

The Fight on Walnut Aphis.

R. S. Vaile, horticultural commissioner of Ventura County, reports that the ladybird beetles do not seem to be much good in controlling the walnut aphis, but that spraying apparently has been profitable. His letter follows:

The present season has shown a very great development of walnut aphid, with a corresponding amount of honey-dew, and sooty fungus. It is the writer's opinion, based on observation and the opinion of others who have watched the problem, that these aphids often cause a loss amounting to 10% of the crop. Certainly it would seem that the vigor of the trees must be decidedly impaired, and I believe that a large number of the "seconds" are caused by this constant drain. Indrectly, I believe the aphids have an influence on the blight because of the lessened resistance of the trees.

For a number of years it has been hoped that ladybird beetles would be able to control the aphids, if present in sufficient numbers, but sections in which large numbers of these predators have been liberated for the past three years show no better condition at present than other sections. More work will be done along this line, but I question its final success.

This spring, just as the buds were starting out, the State University did some experimental spraying both in Santa Barbara County and at the Limoniera Ranch. It would pay all the walnut men of the vicinity to visit the Limoniera now and see the results of this work. The trees sprayed wth lime-sulphur solution have much less of the black, sooty fungus than the unsprayed ones adjoinng. The leaves on the untreated trees are wilting badly, while those on the sprayed trees are very fresh and vigorous. The cost of this treatment should be from $3.00 to $5.00 per acre, and appearances would indicate that increased yield and improved quality would more than pay for it.

Fumigation. Commissioner Vaile has also announced the rulings under which fumigating outfits must work in the county for the coming year. These are: 1st. The Morrill system of measuring trees shall be used. 2nd. The Woglum schedule of dosage, or stronger, shall be used in conjunction with the measurements obtained as above. An exposure of at least fifty minutes shall be allowed. 3rd. A record of the dosage given each tree shall be kept on blanks furnished by the Commissioner's office, and same shall be given to the local inspector at the completion of each orchard. 4th. All tents must be inspected and all holes patched at least once every twenty-five trees covered with same.

BEST FORM OF AGRICULTURAL LIME.

To the Editor: Will you inform me as a subscriber to your valued paper what are the relative or proportionate values in soil benefit, derived from the several forms of lime that may be added to a sandy, lime deficient soil? I refer particularly to "Raw Mix" or ground limestone, slaked lime and quick lime. These several forms are of course obtainable at widely divergent prices. The "Raw Mix" contains about 75% carbonate and is cheaper by weight and easier to handle and less injurious to plant life, but as it will take considerable more of it and the cost of freight and labor will be correspondingly higher, I cannot determine which is the economical form to use without knowing the proportionate benefits to be derived therefrom. If slaked lime is the best form to use is it advisable to buy quick lime and slake it on the ground?—B. C., San Francisco.

Considering the price, delivered, there is not a great deal to choose between well-ground limestone and hydrated or slaked lime. Would say that if the application was to be small and more for the immediate effect than because the soil was greatly deficient in this material that hydrated lime would be best, but that if a heavy dressing was to be applied ground limestone would be much better for the amount of money spent. Buying quick lime and slaking it for fertilizer is very unsatisfactory as it is hard to make a good job of it and the task is very disagreeable. It is much preferable to buy slaked lime or ground limestone. Quick line is not to be thought of as a fertilizer. It is difficult to apply and will burn out the soil. Hydrated lime will do all the good and practically none of the harm of quick lime.

CONTROL OF GRASSHOPPERS.

To the Editor: This county is having trouble with the grasshoppers as are other counties. I have a 20-acre orchard of walnuts, almonds, peaches and prunes, planted part this year and part last. Would you kindly inform me what I could do to exterminate them?—W. E. R., Lower Lake, Lake County.

There is little to add on grasshopper control beyond what has already been said the last few months. The best thing is to fix up a lot of poison. This is made in the proportion of 40 pounds of bran, 2 pounds of molasses and 5 of arsenic, mixed together as a mash. They will take this wherever they find it, even when nice green leaves are close by, but it has to be kept moist. In the issue of June 7, 1913, some details on mixing are given. Grasshoppers can also be reduced by driving a "hopper doser" over ground where they are. This is made someing like a Fresno scraper, but is much longer and the bottom is covered with crude oil. When disturbed the hoppers jump up and fall into the oil.

Besides the poison you should also protect the trunk of the tree to prevent the hoppers from climbing up it. This can be done by applying tree tanglefoot, or putting on one of the tree guards that prevent climbing insects from passing up to the leaves. The combination of poison and tree guards will give you about all the protection you need.

STILL LARGER WALNUT TREE.

To the Editor: In your issue of June 21st, under heading of "Wonderful Growth of Walnut," you mention a walnut tree growing at Yuba City as the largest walnut tree in California and possibly in the world. It may be of interest to you to know that there is a tree on the Cox ranch in this neighborhood that is fully as large if not larger. This walnut tree was planted by Mr. Cox on the natal day of his son, J. P. Cox, who is a well known resident of Sacramento County. The tree in question is on the old home place about two miles from Mills, 12 miles east of Sacramento on the American River.

In January, 1910, the writer in company with W. H. Williamson, examined this tree and made measurements of same, which were:

Circumference at ground	18 feet.
Circumference 6 feet from ground	16 feet.
Approximate height	110 feet.
Greatest spread of branches	100 feet.

This tree at date of measurements was going back owing to the big growth of mistletoe in the top, and the spread of same was considerably less than formerly. There is no question in the writer's mind that this is the largest tree in the State.—C. B. Cunningham, Mills, Sacramento County.

From this data it looks as if the Sacramento County tree had the better of the argument. We would respectfully suggest that Mr. Cox cut out that mistletoe and get a tree doctor to see that the tree goes ahead and not back, also that anybody who thinks he can beat out either of these trees just send along the measurements of his candidate.

WATERMELON WILT.

To the Editor: We have a patch of watermelons which have been doing nicely until just lately, when the vines have started to die. It seems to start on one runner and in a short time the whole vine is dead. The root is in good condition and there seems to be no bugs on the vines. The patch was irrigated a couple of weeks ago, so there is plenty of moisture in the ground. However the vines were dying before they were irrigated and have continued to do so since. If you can suggest any remedy we would be greatly obliged.—A Subscriber, Arboga.

These are the symptoms of watermelon wilt which is caused by a fungus which lives from one year to another in the soil. There is no cure, though resistant varieties are being developed. No melons should be planted on ground where this once occurs.

THE 1912 OUTPUT OF FRUIT CANNERIES.

The California Fruit Grower has just finished the annual compilation of the output of the fruit and vegetable canneries of the State, which shows the pack to be the largest yet, though 1908 ran a good second. There were in 1912, 4,204,070 cases of the smaller cans of fruit and 629,830 of 12 gallon can cases, making a total of 4,833,900 cases. Of vegetables there were 2,506,155 cases of the smaller sizes and 283,340 of gallon sizes, making a total of 2,789,495, or a grand total of 7,623,395 cases of fruits and vegetables.

Among fruits, apples, blackberries, Royal Ann and black cherries, pears, cling peaches, plums, strawberries, raspberries, and miscellaneous fruits made a good gain over 1912 and there was a falling off or only moderate gain in apricots, white cherries (not including Royal Ann), grapes and freestone peaches. There was a big gain in all of the vegetables named, including asparagus, beans, peas, tomatoes and miscellaneous.

Following is the pack of the last 12 years, taken from the same source:

	CASES	
Year	Fruits	Vegetables
1900	2,775,896	803,617
1901	2,677,072	1,076,058
1902	2,252,790	1,151,268
1903	2,733,504	1,343,574
1904	2,839,733	961,783
1905	3,283,296	1,192,455
1906	3,109,225	1,747,595
1907	2,982,955	1,941,755
1908	4,734,663	1,501,885
1909	3,047,001	1,242,720
1910	4,008,549	2,250,645
1911	4,182,650	2,516,655
1912	4,833,900	2,789,495

LADYBIRD CONFUSION.

To the Editor: What spray should be used on rape and Egyptian corn infested with the insects you will find in package sent you? Also, where can I obtain a book called the "Farmer's Manual," reviewed a short time ago in the Pacific Rural Press?—G. B. R., Berkeley.

The insects enclosed show that the confusion regarding ladybirds has not passed away as there were found in the package the green beetle, diabrotica soror, that deserves the enmity of all farmers and gardeners in the State, and also the red two spotted ladybird that deserves the cordial approval of everybody. The difference between these should be recognized. Real ladybirds are fine insects to have around with rare exceptions and there are quite a number of varieties, one all red and others with various spots on red wings. They are insect eaters and devour insects that eat plants. No one should try to control them. The green beetle, which is about the size and shape of a ladybird beetle, having black spots on wing covers, does all the damage that the real ladybird beetles often share the blame for. You can shake them off on to some sticky or oil screen early in the morning and thus greatly reduce their numbers, or spray with lead arsenic. On the plants you mention would not use poison. Try the shaking or grin and bear it.

KILLING MOSS ON BARN ROOF.

To the Editor: Can you inform me what can be applied to the north side of the roof of a barn to keep the moss from growing? The roof is well painted but the moss seems to grow vigorously in spite of the fact.—M. B., Stanislaus County.

In spite of our hunt for a remedy for this condition the best we can appear to get is the old reliable linseed oil. The consensus of opinion is that since moss is a result of moisture and oil will fill the spaces and keep the moisture out, the best and only thing to do is to put on a good application of oil. No material suggested as a poison for the

moss seemed to be considered worth while for any permanent effect, so unless some one can give a better recommendation, we will have to let it go at that. The same treatment is to be advised for the wood on the inside of a cooler, on which the mildew is said to form which another inquirer asks about.

Can We Prevent Dumping?

The fact that every year large quantities of produce of some kind or other are likely to be thrown into the bay in San Francisco or into the dump pile in other markets arouses wrath in the hearts of nearly everybody who thinks of it. Yet the slightest genuine thought on the subject will show that it is a difficult job to fix the blame for this state of affairs, provided anybody is really to blame. And although thousands of persons will say right off hand that this should be prevented and the dumpers jailed, etc., such statements are all made with an utter ignorance or disregard of facts that have to be faced. Still, this condition is bad for State and individual and every effort along rational lines should be made to prevent it.

The firm of attorneys that answer our legal questions for us have kindly called to our attention some of the legal problems confronting those who would stop this dumping, as given in an editorial in the Recorder, the official organ of the courts in San Francisco, which we quote in part.

Each year an over-abundance of several varieties of fruits and vegetables is produced in California which under proper economic conditions would go toward reducing the high cost of living of those most oppressed. But under the imperfect and frequently bad system of distribution which prevails in wholesale markets, not only is there an enormous waste of food, but both producers and consumers are injured directly.

Tomato Difficulties.—Take tomatoes as an instance. Two years ago there was an enormous crop of tomatoes. Canners paid the growers $6 per ton f. o. b. But all the canneries in the State were taxed beyond their capacity during the height of the tomato season, for this is also the season of many other vegetables and fruits.

As a result of the congested conditions of the canneries, growers dumped their surplus on the markets of the bay cities. Tons upon tons of tomatoes accumulated. Prices dropped to a point which barely paid freight, cartage and commissions. Tomatoes frequently sold to retailers at ¼c per pound; it would appear that consumers should have been able to buy at ½c, but this was not the case. Retailers, in order to pay their rent and the charges of delivery, can hardly afford to make delivery of any commodity at such rates. The retail price never fell below a cent per pound, and there was a limit to consumption at that figure.

The result was that stock accumulated in the hands of the wholesalers and had to be dumped. Thousands of boxes were carried away by the gatherers of swill, others went into the garbage crematory, and others were loaded on barges and dumped beyond the heads. A few commission merchants quietly gave their surplus to charitable institutions in the city —quietly, because any consignor of produce could sue him and recover damages so long as it could be proved that the consignment was given away while it was yet fit for human food. The commission merchants in all such cases, however, in making their returns reported so many boxes "dumped."

What Can He Do?—The last legislature passed an enactment forbidding the dumping of farm products when such act is in restraint of trade. This leaves the commission merchant who receives fruits and vegetables on consignment the alternatives, in case he fails to sell it, either to give away produce while it is still fit for human consumption, or return it to the farmer at the latter's expense.

The "restraint of trade" feature of the law furnishes very little protection to the commission merchant, since it would be very difficult to prove that he did not dump produce, no matter what the emergency, in order to relieve an over-burdened market.

If he gives consigned produce away, rather than see it rot in the warehouse, he is subject to suit for damages. If he returns it to the farmer, he forever loses that farmer's business.

What is said about tomatoes in certain years applies to asparagus, to apricots and many other products, and there have been years in which it applied to prunes. Now all farm produce is of value. There are thousands of people who would buy at a price which would at least net the farmer his costs were the distributing system of the right kind.

But here in the wholesale district in one or several varieties of fruits and vegetables each year there is witnessed a

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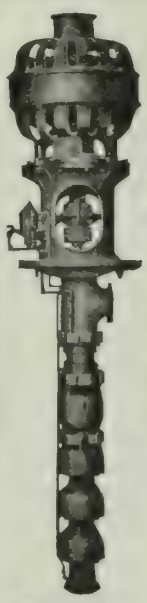

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tremendous congestion of foodstuffs. The farmers are not at fault, for it may happen overnight. The commission merchants cannot always foresee it.

Congestion is not always caused by over-production. Often the California grower who has for many years shipped his produce to Eastern markets finds those markets swamped with Southern shipments, a week or two earlier than in normal seasons. He turns to the San Francisco market for relief and often the local market is over-burdened in a single day and the wholesalers are unable to unload at any price in time to save any food value.

REMEDY DIFFICULT.—To propose any remedy for this condition is difficult. It has been suggested that the State itself might through the office of the Board of Control, take advantage of the congested markets to buy raw foods in some of its institutions, establish canneries in which farm produce could be preserved for the entire year for all the State hospitals and prisons. It would probably require a much more elastic system of trade and barter than is now legally available to the State.

Other suggestions have been made that the producers themselves establish a cannery at the bay and ship their produce to the wholesalers, stipulating that when the price fell to a certain point it was to be turned into the co-operative cannery. Once in the cans, the producer can take his time to find a market.

But in view of the large annual waste some solution of this problem is necessary. With so many who are hungry in the world, waste of this kind is little short of criminal. It is a reproach to modern society that with all the genius manifested in producing there should not have been the same scientific advance displayed in the systems of distribution.

The above sheds a little light on the matter that some people never thought of, but does not go far in helping us out. A co-operative cannery, however, is out of the question, for canneries do all they can now, and a co-operative cannery cannot go in with different methods from other canneries and also make a success commercially where others fail. All must work on the same method.

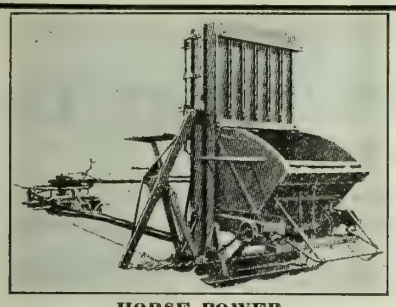
PUBLICITY.—There is one thing which possibly makes dumping unnecessary except in rare cases and that is publicity at both producing and consuming ends. Overproduction frequently makes a surplus that cannot be disposed of so as to pay freight charges. Potatoes, onions, melons, or what not pay well one year and everybody plants potatoes except persons who are wise to the game and don't raise much of a crop that has been profitable the preceding season, though they plant heavily of the crop that has been unfitable. A little judgment on this matter would help.

In other words, we have our horticultural commissioners and various other officers. They now report crop conditions, mainly of tree fruits and have also gathered data on fruit acreage. This, rightly used, should be of the utmost value, especially if new acreage was included, for a person realizing that there was a large new acreage of cling peaches or what not, would revise his planting plans. Acreage reports would be more valuable if account could be kept of new acreage of melons or other annual crops and published at once, possibly with comparison of acreage with previous year. Then a person could stop and think whether the market was to be overwhelmed with any certain kind of product, or undersupplied. The U. S. Crop Reporting Board does about that kind of work now, and the farther it is carried and the more detailed the information the better for all concerned.

Publicity as to market conditions would be equally valuable, and the producer could keep his stuff home and feed it to hogs rather than ship it to the market to have it dumped or bring less than freight and other charges.

The fact also remains, that with the city buyer as lazy and uninterested as at present more than a certain amount of produce cannot be sold at any price whatever and has to be dumped or given away. If given away, it might help to demoralize the markets further. Publicity might help by showing the public that such and such a thing could be bought for little or nothing if they would only come to the markets for it. This would especially help if public markets were established in residence districts where people could get produce at prices proportionate to wholesale prices. That might help to dispose of a real surplus at something better than red letter prices.

Stopping dumping by arbitrary rules while reasons for dumping exist will only cause trouble, and the producer is the one hurt when trouble arises. Our suggestion is publicity to prevent over production and over shipment and publicity to consumer to increase buying when a surplus does not come in. The problem will have to be solved some way and this may be a little push toward its solution.



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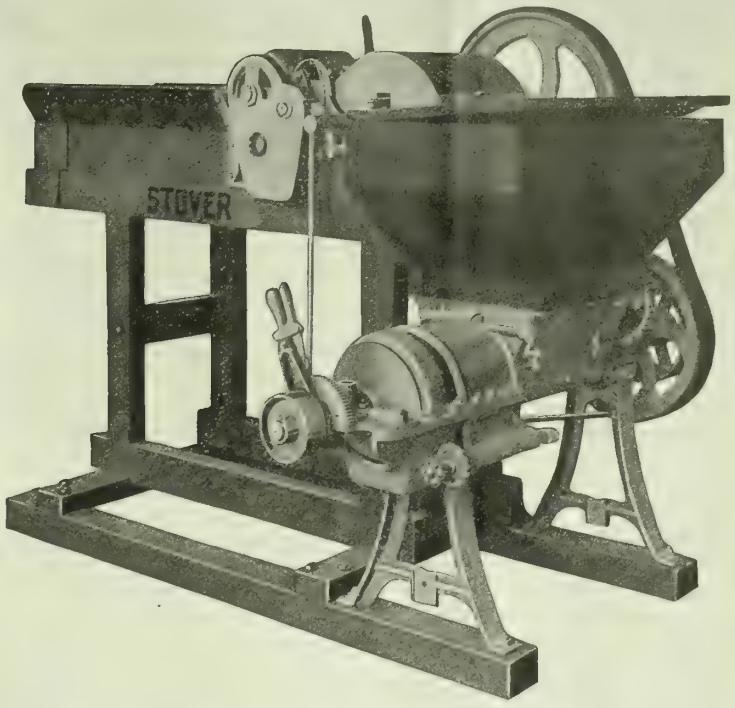

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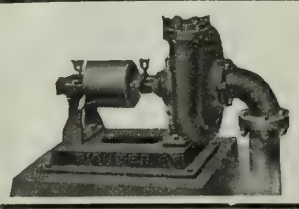
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PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

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T. W. JACKSON & CO., 42 Market Street, San Francisco, Cal.

A Ride Through Canada.

[Written for the PACIFIC RURAL PRESS by L. W. PARSONS, Campbell, Cal.]

After thirty-one years had been spent in the fruit raising industry in Santa Clara Valley, California, the writer decided to visit his native state, Massachusetts. In order to see the fine scenery of Canada, he took the Canadian Pacific road from Vancouver to Montreal. The time was the second week in May, 1913. Leaving Vancouver in the morning in the rain, we passed for several hours along the borders of the beautiful Fraser River. The country was very green and wet. There seemed but little farming country, the land being mostly covered with growing timber. Lumber, lumber, everywhere and people busy cutting or sawing the timber. Log huts are common and the settlements are small and far between. There is some pasture, and cattle could be seen soaking in the wet.

Later in the day, the vegetation was found to be less abundant and the mountains became more prominent. Here and there could be seen small settlements in the valleys but the country became more rugged and bare of everything but pine trees, rocks and snow. The scenery grew more varied and magnificent in its mountains and valleys decked with snow with but little signs of life anywhere.

We felt sorry for a little lone woman who had come all the way from Vancouver to fill a position in a telephone office. She was so disappointed at the contrast between her home with its abundance of green vegetation and the looks of her new surroundings where hardly a green thing could be seen. The guide book told us of cattle ranches a long way off from the railroad and of mines that were being worked and of game to be found in the desolate hills around.

We spent the night at Revelstoke in order to pass through the coming scenery by daylight. We found it to be all that we had expected as we rode through the Canadian Rockies all day. It well pays a journey across the continent to see it, but it is useless to indulge in the usual adjectives, or indulge in the common gush, as no one can realize it without seeing it. A fellow passenger who had seen the Alps said that they did not begin to equal these mountains of Canada. There was enough snow to add very striking effects to heighten the sublimity of the scenes through which we passed and at nightfall we were weary with the nervous strain and glad of a rest. At Banff we bade farewell to the Rocky Mountains with the longing to see them all again in the future.

The next day we spent riding through a flat prairie country evidently good for farming, but the farms are large and houses and towns far apart.

We could see the ground being turned up by the plow and it looked rich and mellow. Cattle were in evidence to show what was being done and at the few stations we passed during the day were appointments for handling stock of different kinds.

A few facts were gathered from fellow passengers. We were told that there is a great deal of good farming land to be had but that one needs to go to the frontier, away from the cities to get a good start with little capital. On the other hand, one must be careful not to get too far from the railroad or he may find it impossible to sell his crops for enough to make anything. One man did that and raised one hundred bushels of oats per acre but had to sell them for ten cents per bushel, and it cost five cents per bushel to thresh them. Later, when the railroad reached him, he could do better. The summers are so short that it is sometimes almost impossible to save the crops as the storms of winter come before the grain can be harvested. One man's plow was left out over night October 1st, and the next morning it was found frozen solid in the ground and there it stayed until the following summer. The people there admit that the thermometer gets down to forty or more below zero but make light of it and say that is not very cold. With log houses and dugouts for homes, and a scarcity of schools and churches, and great distances to haul the crops and to get supplies, the pioneer must be plucky to persist until population arrives and makes life more endurable. And yet many do it and prosper in a way. Winnipeg is a large city of over a hundred thousand inhabitants and seems to be a thriving place.

For about half the distance from the Rocky Mountains to Montreal, there is flat prairie country farmed in one way or another. Cattle bones could be seen from the cars, whether the animals died of exposure or not we did not learn. The last day's ride was through a desolate country, a real wilderness of rocks, thin soil, stunted trees and an almost continuous succession of lakes of all shapes and sizes dotted with islands—beautiful to look at, but unpromising for the settler or agriculturist. Fire wood and cattle seem to be about the only means of support and perhaps fishes in the lakes.

As we approached Montreal, it was a real pleasure to see cultivated fields once more and prosperous homes.

We were now in the St. Lawrence Valley and saw evidence of progress and comfort founded on a seemingly fertile soil.

At Montreal Junction we changed cars for Boston and so missed seeing that celebrated historic capital city of Eastern Canada.

In another letter, notes will be given of rural life in Yankee Land.

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Write us now concerning your next season's planting.

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processed for the purpose, has demonstrated its superiority for the control of

RED SPIDER
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HOOKS ARE MADE OF FLAT GALVANIZED STEEL, 1¼ INCHES WIDE.

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Spring Lock..... 3.00

Wire extra.

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Samples and Prices on Application. Telephone: Kearney 4836.

New Program at State Fair.

There will be some new features at ne State Fair this year that should be f very great interest and value to Agri-ultural California and especially to verybody interested in livestock. In the rogram are stock judging contests for oys and young men, which have been great success in the Middle West, rizes for the best producing herd of airy cows in California, a large in-ease in other prize money, and other ew features. The State Agricultural ociety has just sent out some state-ents that will explain these matters ore in detail, as follows:

The directors of the State Agricul-ral Society have paid particular atten-on to the farmer in getting up the 13 premium list, and increases close $5,000 have been made, bringing the t of awards up to approximately 5,000. This list includes practically erything from the farm, factory and me, the majority, however, going to rm products and live stock. It is sired that these premium lists reach e interested farmers of the State, so cretary J. L. McCarthy asks that all ose desiring to exhibit write for a list him at Sacramento. The list will be the press at the State Printing Office ry soon.

Stock Judging.

The boy on the farm and the agri-ltural college student will have a ance at this year's fair to compete $400 in prizes offered to the winners stock judging contests, and another will go for a poultry judging con-t. The nine prizes for the stock ging contests are as follows:

To any boy under 18 years old living California who has not received in-uction in live stock judging at any hool or college: First prize a $40 olarship during the short course at the University Farm, Davis; second prize, a $25 scholarship, and third prize $10 in cash.

To any young man between the age of 18 and 22 years who has not received any training in agriculture in a school or college and who has not received a premium in any previous stock judging contest: First prize a $125 scholarship at the University Farm regular course; second prize $75 scholarship, and third prize $50 scholarship.

To any young man or boy under 25 years old who has had two weeks or more instruction in live stock judging at some recognized agricultural school or college since September 1, 1911: First prize, a $50 inspection trip to prominent breeders' ranches in California, plans of the trip to be approved by the Animal Husbandry Department of the University Farm; second $15 cash, and third $10 cash.

Further particulars and entry blanks may be obtained from the secretary at Sacramento. The contests will be held early in fair week so that the contestants will judge the stock before the premiums are awarded by the judges who select the ribbon winners.

Dairy Prizes.

A number of other special prizes are up this year, one of which is a $400 offer for the herd that has the best yearly butter fat average. The award must go, however, to a herd of at least twenty cows that are part of some regular cow testing association. Two cows from the herd with the records must be exhibited at the State Fair as part of the prize conditions. This prize is aimed to call attention to the work now going on throughout California to secure better butter fat producing cows, as well as reward the dairymen who are leading in fat production now.

The annual horse show, which is a big feature of the State Fair, will offer an increase of $1,000 in prizes this year, making $1,750. The larger part of entries for this are in the saddle horse classes. A $100 prize will be awarded for ponies under 12½ hands high, making an attractive feature for children.

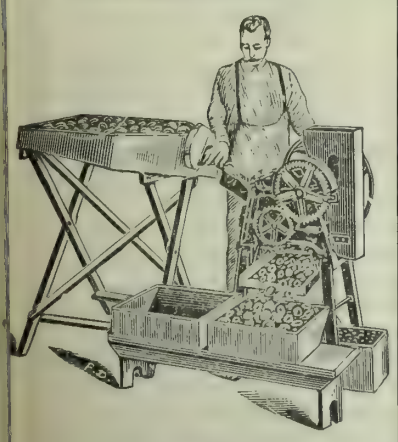
Assocation Awards.

The special awards outside of the premiums offered by the Agricultural Society, are numerous this year, among them being the following:

The Percheron Society of America, $60 and medals; Shire Horse Society of London, gold medal; American Shire Horse Association, silver loving cup; American Shorthorn Breeders' Association, $400; American Hereford Cattle Breeders' Association, $200; American Jersey Cattle Club, about $325; Holstein-Fresian Association of America, silver cups and 15 per cent added to each cash prize given by the fair to this black and white breed, making about $150 in cash from the association; American Angora Goat Breeders' Association, silver cup; American Berkshire Association, silver trophy; National Duroc Jersey Record Association, $75 cash and silver trophy; National O. I. C. Chester White Record Association, $30 cash.

The stock parades this year will be on Thursday, September 18th, and Saturday, September 20th, and in these parades will be all of the prize winners. It was stated last year that the parade represented the best array of live stock that was ever shown in the State. This year it should be better. The best live stock and poultry judges in the United States will be secured to make the awards.

Improved Fruit Pitting Machines



Capacity:

APRICOTS, 1 ton per hour.
PEACHES (freestone), 2 tons per hour.

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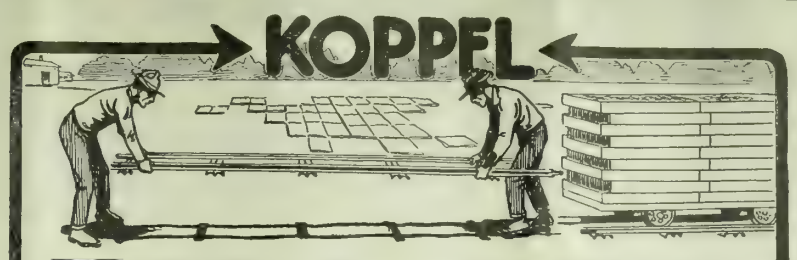

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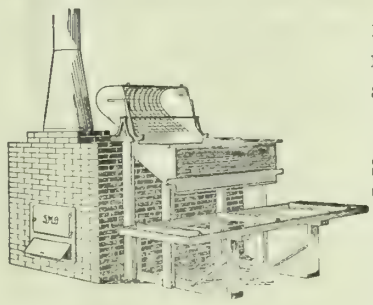

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PORTABLE EVAPORATORS

No. 1.. 8 bushels per day.
No. 2.. 15 bushels per day.
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Trees that grow and bear true to name. Now booking orders for next season. Let us know what you will probably want.

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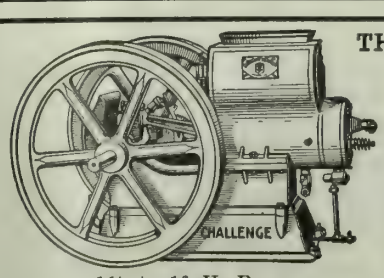

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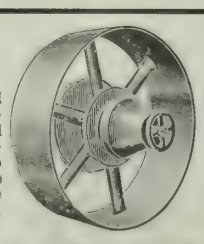

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AGRICULTURAL REVIEW.

With the Fruit Men.

The Turlock cannery is to open today for the season's run. The work will start with canning peaches, followed with pears, tomatoes and sweet potatoes. A pack of from 75,000 to 100,000 cases is expected.

The Yuba County Farmer states that the entire peach crop of that locality has already been contracted for by canneries. Prices ranged high. For the Tuscan variety an average of $37.50 was paid, for Phillips $32.50, for free stones only $17.50 was paid.

It is stated that the California Fruit Canners' Association is quoting raisins of the 1912 crop in the East at 5¾ cents for fancy and 5 cents for choice seeded raisins for July and August delivery.

The two fruit canneries of Visalia opened for the season's work this week. Each institution expects to pack 100,000 cases before closing down.

The first car of grapes from California for the season left the Imperial valley last week. They were of the Thompson seedless variety.

A big apricot crop is being harvested in the Maywood colony at Corning. Prices paid are very good.

Grasshoppers are reported to have done considerable damage to the grape crop in the vicinity of Maxwell, Colusa county. The prospects for a big crop there were fine until the advent of the grasshoppers.

Commissioner G. A. Lanniman reports fruit crop prospects as being fair only in Shasta county. Hay and grain will yield bumper crops. A large increase has been made to the alfalfa acreage this season.

The unusually hot weather that visited the State last week caused some damage to the fruit crops of the interior valleys. In Yolo county G. H. Hecke reports prunes, grapes and peaches were hurt some. In Butte county the prune crop suffered some injury. At Lodi the grape crop was damaged 10 to 15 per cent, and around Fresno it is stated that the Muscat grapes were hurt fully 15 per cent, while Thompson and Malaga grapes were not affected.

A local branch of the California Cured Fruit Association was formed at Kerman on July 11th. A large membership is reported.

The big Selma fruit cannery commenced the season's operations last week by packing apricots shipped there from Santa Clara county.

The Sebastopol Apple Growers' Union is now packing and shipping lots of Gravenstein and Astrachan apples. The fruit is in demand and brings good prices. Owing to the hot weather of last week the berry shipments fell off, most of the fruit going to the canners.

A large acreage has been set to oranges this season in Kern county, around Delano. Already 23,000 young citrus trees have been set out, and besides these 50,000 olive trees and cuttings have been planted.

The Mills Orchard Company has growing in the nursery at Hamilton two million young eucalyptus and cypress trees, which will be set out as windbreaks next year, around the big acreage already planted to citrus trees.

The work of planting thirty acres of the old Gould tract, near Palermo, to olives has been completed and the start will be made immediately upon the other five acres that are to be planted this year. The planting is to be done under the direction of J. H. Leggett and James C. Martin, Jr.

A dispatch from Lodi states that Oakland buyers are contracting for wine grapes at $12 per ton. They announce that they want 50,000 tons, will furnish the boxes and will pay spot cash. The winery contracts call for $10 per ton. A shortage of the crop is expected, due to the hot weather burning some of the grapes.

A letter from Secretary Kruckeberg regarding the annual meeting of the California Nurserymen's Association, states that owing to the fact that the Portola Festival takes place in San Francisco on October 22-25, 1913, (the dates originally chosen for our third annual meeting in Fresno) it has been deemed advisable to change dates by placing them one week earlier, namely, Thursday, Friday and Saturday, October 16, 17 and 18, 1913.

Good Deciduous Shipments.

Up to last Saturday, July 12th, there had been shipped from California 2143 cars of deciduous fruits this season, as against 1289 cars to same date last year. Prices have been considerably higher in the East than in average years. Last week peaches sold on the eastern auctions for an average of $1.40 per box. Cherry shipments have all been made, and while the crop was short 14 cars of last season, yet it exceeded estimates by fully 50 cars. Besides this the prices secured were about 25 per cent higher than usual.

On July 12th Chicago auction prices were:

Chicago — Pears: Bartletts, $2.85. Plums, Tragedys, $1.75; Burbanks, $1; Wickson, $1.50. Peaches, Fosters, $1.50; St. Johns, $1.40; Early Crawfords, $1.60; Hales, $1.35.

Crops Good in Santa Barbara.

From Commissioner Beers' report of crops in Santa Barbara county, conditions seem to be getting in better shape as the season progresses. He says the walnut crop promises much better now than a month ago. The work of aphids and blight has been checked. Special work is being done there in studying the cause of "black-sap" on walnuts. Hay and grain crops are turning out very much better than was expected. Carpinteria is making an effort to secure the location of the new State $180,000 experiment station. The lima bean crop in that section has been benefited by late rains and will be quite heavy. It is said that contract prices from $4.90 to $5 have been offered for recleaned new crop beans. Around Lompoc the bean, onion and potato crops all give promise of big yields. The United States department of agriculture has had representatives in Santa Barbara county looking into the practical feeding value of the carob trees, which produces a pod that is used as a fodder. The department has about 100 trees of this variety there for experimental purposes.

General Agriculture.

The wheat harvest is just beginning in Sutter county and the prospect is fine in most sections. The barley crop, almost harvested, has yielded better than was expected.

Sheep men are buying up the wheat stubble for pasture for their sheep in the Tulare Lake region. The crop harvested has been fine and the sheep will have good pasture for some time.

The harvesting of the first crop of Sudan grass has been completed on the experimental plots at Chico. This first cutting was from six to seven feet high and one or two more cuttings are expected to be made this year. The new forage crop is expected to become a very valuable one in this State. Applications for seed of this new variety should be made to the Bureau of Plant Industry at Washington, D. C.

The San Pedro, Los Angeles and Salt Lake railway announce the appointment of Prof. Lewis A. Merrill to the position of agricultural expert. The duties of the expert will be to advise farmers adjacent to the railroad on any line of agriculture and to help in soil and water analysis. Prof. Merrill comes from the Agricultural College of Utah.

The Lake County Bee states that crops in Scott's Valley are exceptionally fine this year. It quotes one grower, D. A. Robinson, as stating that his wheat will make 35 to 40 bushels per acre and his barley from 50 to 60 bushels to the acre.

The third cutting of alfalfa in the Porterville section is now in progress. The crop is extremely good and prices are high.

Alden Anderson of Sacramento, states that after traveling through the Sacramento valley and part of the San Joaquin, it is his judgment that the farmers will receive as much for their crops this year as for any average season, in spite of this being the second dry year in succession. One reason for the large production is the great amount of irrigation being done, especially in the section between Stockton and Sacramento.

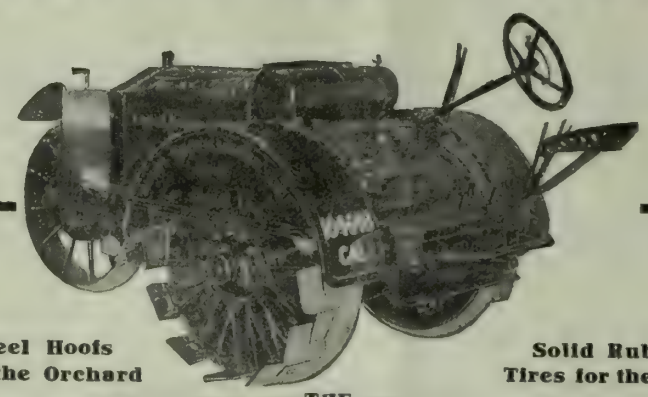
According to the Merced Sun the Crocker-Huffman Company is now preparing 3,000 acres of land to seed to alfalfa next season. A modern system for irrigating is being installed and the land leveled and checked.

Land Development.

The 1,200 acres of land together with the cattle and horses comprising the 7T ranch near New Pine Creek, Lake county, Oregon, was sold last week to J. C. Mitchell of Hamilton City, Cal., for a sum said to approximate $100,000. This ranch is known as one of the best in that section.

The famous Buhach ranch, four miles north of Merced, is to be subdivided and colonized, according to announcement made today by the Co-operative Land and Trust company, which will handle the tract. This ranch, comprising 1,200 acres of highly improved land, has long been a show place of Merced county. For

PROFIT and PROOF



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Solid Rubber Tires for the road

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A FEW OF ITS MANY FACTORS

It will do more work than ten horses at HALF the cost.
It will Plow, Disc and Harrow your Orchard or Farm.
It will haul your crops to market.
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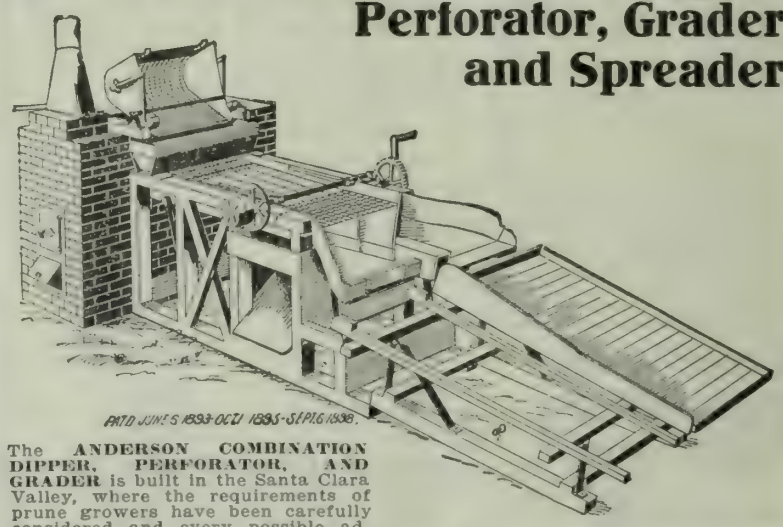
Anderson Combination Dipper, Perforator, Grader and Spreader



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ANDERSON-BARNGROVER MANUFACTURING CO., West Julia San Jose, Cal

over 30 years the Buhach plant has been produced here for the manufacture of the insect powder of that name. The factory is located in Stockton, and it is understood that the manufacture of Buhach will cease. The ranch now is planted to various kinds of fruits, as well as to the buhach plant. There are 100 acres in peaches, 60 acres in almonds, 20 acres in pears and 500 acres in grapes. These improvements will be sold the colonists and land not otherwise occupied will be planted to alfalfa at once, and a guaranteed stand sold with the land. Most of the land is under irrigation. J. F. Peters of Stockton is the principal owner of the Buhach company.

The Spreckels Sugar Company has recently leased 4,000 acres of land of the Jacks Corporation in Monterey county, and last week the company leased 760 acres more from Matt Williams near Gonzales. The company is preparing to extend its sugar beet acreage.

A large tract of land fronting the ocean between La Jolla and the biological station in San Diego county, amounting to 440 acres, was sold by the C. D. Richards estate last week. The land is to be cut up into town lots and small tracts.

The sale of the Monte Vista vineyard near Biola, in Fresno county, is reported. The tract embraces 120 acres, 80 of which is planted to Muscat grapes and the balance to alfalfa. The price is said to be $30,000.

Mrs. Margaret L. Burbank last week completed the purchases of three tracts of land adjoining her home place near Tomales, Marin county. She now has a total of about 1,200 acres, making one of the finest ranches in that locality.

Live Stock and Dairy.

The Yuba Dairy, one of the largest milk supplying concerns in the valley and located three miles west of Yuba City, will shortly go out of the dairy business and the big 265-acre ranch will be devoted to the raising of alfalfa and thoroughbred swine. The several hundred head of fine dairy cows, some of the best that money could buy, will be sold and the big dairy barns, said to be the best equipped of any in the valley, will be closed. Labor troubles is said to be the cause of the change.

The Reynolds Apple and Alfalfa Development Company is a new corporation that is reported to be getting ready to take over the Reynolds ranch near Soulsbyville, Tuolumne county. The company proposes to plant the lower ground to alfalfa and the higher part to fruit trees, and will pay particular attention to the dairy industry.

W. M. Carruthers tells us that he sold this week for Simpson Finnell of Orland, 268 head of young mules, from one to three years old, to George Emmons of San Francisco. The mules will be taken to the Danville stock ranch to be ready to use in the drayage work of Mr. Emmons in the city. This is one of the largest deals in mules that has been made in California for some time.

The new creamery at Stonyford, Colusa county, is now handling the milk for the dairymen of that section, which means a considerable increase in the alfalfa acreage.

The assessment rolls of Humboldt county show that there has been a gain of 4,806 head of livestock in that county during the past year. The total number of head of stock there now is given as 121,574, with a valuation of $933,765.

Walter J. Lane is preparing to build and equip a modern dairy at his ranch near Turlock. He estimates that the cost of the barn, tankhouse, separators, etc., will cost in the neighborhood of $6,000.

How to Fertilize Orchards

A rather fundamental question has come in regarding the fertilization of fruit trees, apple trees in particular. The New York Experiment Station issued a bulletin on the subject which fell into the hands of a Sebastopol grower who felt that it was not much of a stimulant to orchard fertilization and wanted to know what we thought about it. Perhaps the best way to start is to quote parts of the bulletin itself.

"Recent tests at this Station indicate that the manure and chemicals, often applied very liberally in orchards, have been wasted unless some other crop was grown among the trees. These experiments indicate that on good soils, properly drained and tilled, and with the trees kept in a healthy condition, the apple secures plenty of plant food for its needs and responds but little or not at all to liberal fertilizing.

"Some reasons why this may well be true are apparent when we consider the development and fruiting of the orchard. The trees grow for several years without setting a crop and when in bearing usually have 'off years' in which to lay up a surplus supply of fruit-making materials; they feed deeply and widely; they take up and evaporate immense quantities of water so that even if the soil solution be very dilute because of small quantities of mineral elements present, the total amounts passing into the trees with the water during the long season of growth are ample for all the needs of the crop; the fruit contains a small proportion of solid matters, particularly of those that man often has to furnish for other crops; and the trees return to the soil, in the falling leaves, much of the food utilized. The soil must be of a poor fruit type, indeed, that will not, when properly handled, grow good crops of apples without artificial feeding.

"In a twelve-year test on old trees in one of the Station orchards, the use of liberal quantities of wood ashes, furnishing potash and lime, and of acid phosphate, did not increase the crop to a profitable extent in either number or size of fruits, nor did it improve the quality or color. In another test, incidental to the main comparison of sod mulch and tillage, the application of fertilizers in the tilled portion of an orchard—where only could the fertilizer effect on the apples be studied—was profitless. In the sodded half of the orchard, nitrate of soda was beneficial to the fruit; but probably only because the grass used the nitrate and left in the soil the other food of which it robbed the trees on unfertilized plats.

"The final conclusion must be that the trees in this experiment would be practically as well off in every respect had not an ounce of fertilizer been used about them. If fertilizers have no value for young trees in this orchard, they have no value in innumerable other orchards in New York. Fruit growers are spending money and losing time in 'carrying coal to Newcastle.' One of the lessons the experiment should teach is that fertilizers are not necessary in some soils of tillage and good care be the rule—the truth of the old adage 'tillage is manure.'

"How may a fruit-grower know whether his trees need fertilizers? It may be assumed at once that if trees are vigorous, bearing well and making a fair amount of new wood each season, they need no additional plant food. If the trees are not in the healthful condition described, the logical thing to do is to look to the drainage, tillage and health of the trees first and the more expensive and less certain fertilization afterward.

"As a last resort, fertilizers ought not to be used to rejuvenate trees unless the owner has obtained positive evidence that his soil is lacking in some of the elements of plant food. To obtain such evidence a fruit-grower should carry on a fertilizer experiment."

The conclusion that must be reached here is approximately the same as in New York, only with some modifications. A lot of the details spoken of in the bulletin, though not quoted here, are inapplicable to California conditions where we have a deeper and better drained soil, practice clean cultivation while the trees are growing and let the cover crop come up when the trees are dormant, etc., yet our real guide has to be about the same as is stated in the bulletin that is, if the trees are getting along well fertilization will be unnecessary.

And just as true it is that when trees are going back, refuse to bear regularly, are unthrifty, something has to be done to make them pick up again. It may be fertilization, it may be better tillage and management, it may be a combination of both. We don't have the poor drainage to contend with and we can't blame the poor condition of a tree on that, so the problem is simpler. We do let the plow sole form and the hot sun burn out our humus, and one of the safest things to do after we see that the plowing and cultivation is what it should be is to see that a good growth of vegetation comes in winter to put life in the soil, to let air down to the roots, to give it a better texture, to supply nitrogen, etc. Fertilization may help to give a fine cover crop and supply the trees with plant food also. If humus, moisture conditions and tillage is what it should be and even then the trees are downcast, fertilization evidently is needed.

Results are conflicting in practice. We have one orchard in a coast county in mind where fertilization gave fine results even where the trees were doing excellently before, and a check plot was used to verify conclusions and another under almost the same conditions where trial fertilization apparently was ineffective. In the citrus industry it is known that the growers who care best for their groves in every particular fertilize the heaviest. It is not demonstrated by any means that such practices would not be very profitable on deciduous trees and in fact there is good reason for believing it would, giving strict attention all along the line, but as a tenetive rule it can be said that where the trees at the start are unthrifty, other conditions should be carefully looked after, and that a person finally should take the nature of his soil and the probable needs of his trees into consideration before deciding what fertilizer to use. It's too big a subject to go into detail about all in one small talk.

PRUNING THE PRUNE.

(*Continued From Page 49.*)

there is any experiment about it, apart from the evidence that in France it certainly pays. There is no physiological or pomological reason why one variety of plum should receive a treatment diametrically opposed to that given any other. Pruning a fruit tree has but one object: to increase the production of good fruit. To stop pruning a fruit tree, or never to prune it, can bring about but one result: an overproduction of inferior fruit, causing a decline in the vitality of the tree itself, which either has not strength left to bear regular crops or the fruit it does bear is practically unmarketable.

Personally, if I possessed an orchard of trees like the California specimen illustrated here, I would saw the whole top off and form a new and well-opened head, giving annual pruning, both shortening in and cutting out, and I would suggest that those who have orchards of young prune trees give this matter some consideration also.

We all know that pruning fruit trees is a practice open to modification in accordance with existing conditions and with individual preference and judgment. But in this case the whole principle is involved: to prune or not to prune the prune.

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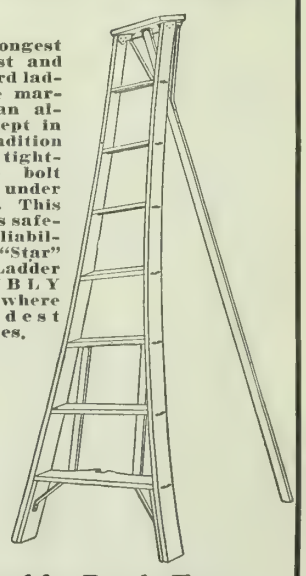

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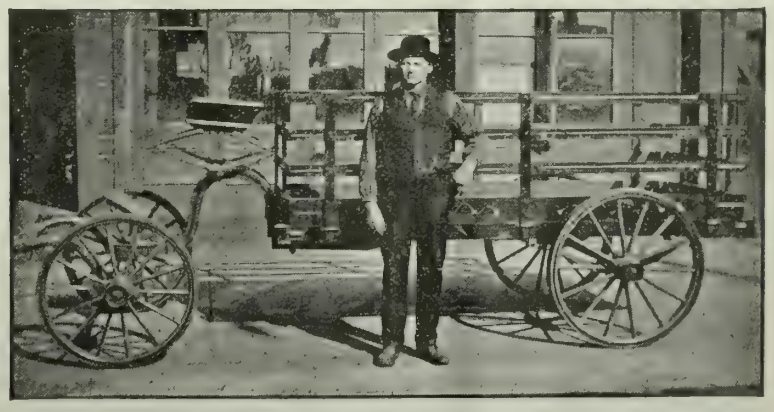

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The Last Word on Tuberculosis.

[By Our Associate Editor.]

At the University of California last Friday one of the most important events occurred in livestock lines of the year, that was the gathering of some of the most noted authorities in the world to confer together in order to find just what conclusions they could reach regarding the standing of bovine tuberculosis control.

Talk tuberculosis to many dairymen and they begin to wonder whether you are holding a club behind your back, or whether you really intend to talk sense. A good slice of the time tuberculosis testing has been a club with great big knots on it for the dairyman. Other times it has been a reasonable method for cleaning tuberculosis out of his herd or of keeping it out. When a public authority brings up the subject the dairyman, as we said before, never is sure whether the result is going to be hit or help. This conference was to find out which of these results was to be.

The unanimous opinion was in favor of the help and never before in California has this subject appeared to be put on such a reasonal and helpful basis; never before did the probability of finding a satisfactory method of fighting this disease look so promising.

Two reasons why things look so well for the dairymen are these: First, without exception the scientists present realized their ignorance as to the proper methods to pursue and were determined to find out by careful investigation what was right before rushing into things; and secondly, they all had the attitude that the dairyman was the person whose interests were far and away above all others and that all tuberculin testing should be done with his approval and interests.

The statement of ignorance regarding tuberculosis in a way is overdrawn, for a great deal of very valuable knowledge on the subject is had and the tuberculin test is here to stay and is a great held to the dairyman. But there are fine points that are not known by the best authorities and great injury has been done by unskilled handlers of the test or by rushing into compulsory testing on the wrong basis.

Dr. R. A. Archibald, health officer of Oakland, told, for example, how a few years ago in Alameda County a widespread tuberculin test was forced upon the dairymen and reactors galore were destroyed, the dairymen paying the piper, of course. Then a year or so later another test was required and lo and behold. the herds were as bad as before and the dairymen with one accord yelled, "Hey, you, quit. Where are we going to get off?"

Not that Dr. Archibald would use such language, but we are quite familiar with the occurrance and vouch for the fact. All present swore that such a thing, which has happened all over the country, must not happen again and Dr. Archibald states that any dairy ordinances or rulings for the City of Oakland are now first discussed with the Alameda County Dairymen's Association and everything is lovely for both dairymen and city. Such sentiments being unanimously conferred in, the better outlook for the dairymen is clear.

In early days of tuberculin testing the viewpoint of the consumer alone was considered to the financial detriment of the dairyman, which viewpoint has now changed so that it is seen that the most profitable condition of the dairymen means the best suited consumer.

A few of the conclusions that could be drawn from the discussion follow. In the first place, the best method of applying the test has not been decided upon yet. For example, they have six or eight ways of applying the test, all of which have some advantages and some disadvantages. The method now in use, of injecting the tuberculin clear through the skin, is being found inferior to the method of injecting it into the skin itself. Animals one time will react to one test and one time to another, so what are you going to do about it? That is just a little problem.

Another very important thing is, What can be done in a large herd where all affected cows will not react? It was unanimously agreed that in every large herd where a number of the cows had the disease there would be several who would be affected without showing it in the test and these would in their milk do most of the damage that the reactors would do and also keep the disease spreading among healthy cows. The dairyman has thus to slaughter good cows without especially checking the disease in his herd.

In brief, there is a good deal not known about tuberculosis and tuberculin testing even yet under the most careful handling and by the best nformed persons and on top of this comes the havoc wrought by persons who actually know little of what they are doing and are poor workers besides.

It was the consensus of opinion that the testing of the future would have to be done by skilled veterinarians and by none others, few others at least. Dr. M. D. Ravenel of the University of Wisconsin, who is in the forefront in bovine tuberculosis work, claimed that not one student in 500 employed to test cows by a university is sufficiently acquainted with the normal condition of a cow to justify his employment. Furthermore, not more than one dairyman in 500 was any better, though a dairyman who would carefully learn to watch his cows and become acquainted with what to expect could learn to make the test properly, and as well as the most skilled veterinarian. In other words tuberculin testing is nearly useless, and perhaps worse than useless, when done by persons who do not know thoroughly what they are doing and that applies perhaps to some veterinarians, to many dairymen and to other persons who are neither veterinarians nor dairymen, but yet do testing.

Finally, in case all the above ideas should seem to be against the use of the tuberculin test, it can be said that the outlook is more favorable than ever before for a final great success with it. Dr. Veranus A. Moore of New York, probably the greatest authority living on the subject, stated he was convinced that the problem was much simpler than any one would dream after looking the difficulties in the face and Dr. Moore has very strongly the attitude of the dairyman on the subject. Certainly the poor handling of the test, wrong methods of applying it, unskilled operators, extravagant claims by organizations who, ignorant of conditions, have tried to force the test upon dairymen in ways similar to those which Dr. Archibald mentioned, would be enough to ruin the best of agents. It would be a wonderful test that would be fool-proof as the tuberculin test would have to be to stand all these attacks. Its merits must be great if it can have the standing that it has at the present day in spite of all these obstacles.

And now, this conference seems to make clear the fact that a better understanding and method of operating be developed and it will not be required to be fool-proof. This means a better outlook for the dairyman and for all concerned.

We may have drawn the wrong conclusion from one part of Dr. Ravenel's talk, but apparently with more profitable and systematic dairy methods tuberculosis will almost be forced out of herds with the help of course, of tuberculin testing. The Babcock test is one of the greatest aids to this, for it shows the owner just what every cow is doing. A sick cow cannot be a good cow any more than a sick man can be a good worker. When the Babcock test is the regular thing the poor cows and the sick cows will be discovered at once, when at least the sickness has affected production. That help to the removal of the tubercular cows will be direct and in addition the dairyman will want to clean up his herd to prevent other cows being ruined.

Another sidelight on tuberculosis control is shown by a statement of Secretary F. W. Andreasen of the State Dairy Bureau in private conversation. In a preliminary meeting it was related how in a bunch of animals that was being slaughtered a large number were found affected. Of the remainder an examination in the corral was made and 17 picked out as probably being tubercular. Of these 15 proved the examination trustworthy. It was one of the strong points of the Dairy Association bills pocket vetoed by the Governor that physical examination was to be used as one method of fighting tuberculosis in dairy herds. Secretary Andreasen supported the bills, though disagreeing with them in a few points. He stated that viewing the facts brought out in conference, he was more sorry than ever that they did not become laws.

Our final conclusion in the matter is that the opposition to tuberculin testing has been to a great big extent justified on account of the unreliable results, owing partly to poor methods, partly to unskilled application and partly to a deliberate attempt in certain cases (by dairymen) to make the test ineffective.

The standpoint of the authorities and of the University, for whose benefit the conference was called, is that the proper thing to do is to fully recognize the shortcomings of the test as at present applied, to determine the proper method of working, to have the test used only by skilled operators, and to co-operate heartily with the dairymen in its use. It will be a big thing for the dairyman when the best way of cleaning out the expensive disease can be found and the outlook was never brighter for success.

Great credit, by the way was given Dr. Haring, veterinarian at the university, and his associates, for great steps toward the solution of the progress that had been made. These experiments have been extended over a long period and apparently they are not far here from a final determination of the best way to apply the test. That, by the way, is the interdermal method, or by injecting the tuberculin into the skin instead of under it, but that is another story.

CURES FOR COW TROUBLES.

[By Charles Keane, D. V. S., Dean and Professor of Comparative Medicine, San Francisco Veterinary College.]

Disturbances in digestion are by far the most common ailments of cows. On the first signs of indisposition in a cow the food should be investigated, and at this time if a saline purgative is administered the attack will often be aborted. A drench consisting of one to one and a half pounds of Glauber's or Epsom Salts in solution of water is the best purgative at this time.

Inflammation of Udder in cows in often infectious and can be carried from the affected to healthy members of the herd on the hands of the milkers. A good practice to follow is, to segregate any animal showing disease of the udder until it has recovered. The milker should wash and disinfect his hands after milking such a cow.

Depraved appetite in cows, in which they eat dirt, gravel, etc., is generally the forerunner of a more serious affection of the bones, and is due to a deficiency of bone forming elements in the food. Finely ground bone meal added to the food assists in overcoming this affection. Such cows should also have access to a piece of rock salt where it can be licked at will.

Young calves suffer from a variety of diseases, such as inflammation of the joints (Joint ill), diarrhoea and pneumonia, that are due to infection taking place through the unhealed umbilical cord (navel string). These affections can be stopped by a thorough cleaning and disinfection of the calf barn, and washing the navel with a 3% solution of creolin, after which paint it with tincture of iodine.

Cows lose their calves (abort) from a variety of causes. However, infectious abortion is very prevalent in the dairy herds of this country. For this reason, take no chances. Isolate immediately every cow as soon as she shows signs of impending abortion. When she aborts burn the calf and its membranes. Clean up and disinfect all discharges. Wash her hind parts with a 3% solution of creolin. Keep her out of the herd until all signs of discharges have disappeared.

Never use force to remove a calf from a cow unless you are sure the calf is in the right position. Undue force used when the calf is in some positions will result in severe laceration and tearing of the cow and might result in death of the latter.

Flooding (excessive bleeding) which sometimes occurs after calving, can often be controlled by dashing cold water over the loins of the cow.

Bloody milk is caused by injury to or disease of the udder; also by functional derangement of the udder due to excitement in heat, eating of irritant plants, etc. In all cases a reduction in rations and the administration of a purgative dose of Glauber's or Epsom Salts is advisable.

Milk sometimes becomes red tinged after standing a while. This latter condition is due to the presence of a microorganism that enters the milk after milking. Thorough attention to cleanliness and sterilization of milk utensils, will prevent the condition.

Mastitis (inflammation of the udder) may be often induced in a cow by rough milking when the teats are sore or chapped. Chapped teats may be relieved by gentle rubbing with vaseline before and after milking. Several applications of zinc ointment to sore teats, after cleaning them, will relieve most cases.

Bleeding from the navel cord in a calf may be stopped by tying it firmly with a clean piece of string. Before tying always be careful to examine the cord to see that it does not contain a loop of the bowel.

Cutting Alfalfa for Big Yields.

[By J. C. Loomis.]

At this time of the year stockmen in our alfalfa districts are exceptionally busy harvesting the alfalfa crops and it would seem a very appropriate time to give a few facts along that line.

Especially should this be given more consideration by those who expect to feed the hay out to dairy cattle, because if it is not cut at the proper time and cured rightly a great deal of one's crop is lost as far as the feeding value is concerned.

A rancher who has given the subject much practical study gave us his method of handling hay which seemed particularly good, so we give it in the following as he told it to us:

"I have been fairly successful with alfalfa simply because I studied the plant in its growth and afterward as to its feeding qualities. The alfalfa you see cuts 2½ tons to the acre and at this time of the year, July 1st, I cut a crop every five weeks, although naturally it takes longer to grow a crop in the spring months. Now, if I cut it the first week I wouldn't get anywhere near 500 pounds, two weeks would yield a little more in proportion, but not nearly a thousand pounds, and so on up to the fifth week and here is where I think people make a mistake in harvesting alfalfa. As soon as it gets to good height and starts to bud they cut it, which in most cases is before it has finished its entire growth and also before the new shoots start out. In this way the old shoots try to keep on growing which holds the young shoots back for another week, so the farmer looses one week's growth at a time when I consider the largest growth is made. For this reason my alfalfa grows all the time as I do not cut the old until the new shoots start out and I am able to get a larger tonnage than my neighbors who use other methods.

"Some may object to this system and say that it makes coarse hay. While it is true that the quality is not so good as if it were cut younger I am able to get about four tons of hay more to the acre. At present prices I can sell this for $40 and with this money, or rather a part of it, I buy concentrates to feed with my alfalfa and in this way my cows not only give more butter fat, but relish the hay more and as a consequence eat it all up. I have always kept track of my income from the ranch and find that by harvesting my alfalfa in this way and by putting part of the extra money into concentrates my gross income for the year is much larger than before."

That this man's revenue is larger than a great many is evidenced by the fact that during the last ten years he has made $35,000 and most of this has been made at dairying on rented land.

While from the above it would seem necessary to cut at the right time the handling afterward also has a great deal to do with the quality. A good many whom we have talked with on this matter seem to think that in our hot valleys the hay should be put into larger shocks than is ordinarily done. The reason for this is that hay exposed to the sun does not cure but rather dries out so that by putting into larger shocks a smaller portion is exposed to the sun and as a consequence more of it actually cures. As cured alfalfa makes a much better feed than simply dried hay, it would seem that the larger shocks pay.

Perhaps it is unnecessary to state that one should haul the hay from the field as soon as possible after curing if he is to receive the best results.

Taken as a whole farmers would do well to give the harvesting of alfalfa more attention than simply driving a mower rake or hay wagon.

RICKETS—EFFECT OF ABUSE.

To the Editor: I own a fine registered Duroc-Jersey boar sixteen months old, weight about 380 pounds, well built, with little surplus fat. Until lately he has been very thrifty, but appears to be losing control over his legs. Can't step over the smallest stick without falling forward and acts like a foundered animal. He carries his back rather arching since this trouble came on. His daily rations consisted of 2½ pounds of barley and 2 pounds of shorts with some cooked potatoes during the winter season. Since the growing season I have discontinued the potato ration and given the run of a good pasture instead with plenty of good running water and shade. He also gets once daily a handful of a mixture of principally ashes and burned barley (charcoal) with the usual addition of mineral substances such as salt, sulphur, soda, copperas, etc. Can you tell me what to do for him, as he is a valuable animal and I would hate to lose him? Will it do to use him for breeding purposes?

In connection with the above I would like to state that during my absence from home a hired man gave this boar a good beating with a pick handle, and it appears to have been the beginning of his troubles. I have pondered some over this situation. If the boar had injured the hired man I would be responsible to him for damages under the present new law, but as it stands who is going to repay me for sustained losses incurred by an incompetent and spiteful laborer?—W. E. L., Covelo.

Answer by Dr. E. J. Creely.

This disease is Osteo Rachitis (rickets). The abuse has probably aggravated the symptoms. This condition is due to a lack of hardening principles in the bones. Your treatment is good. I would advise that you give four ounces of cod liver oil daily and plenty of lime water to drink. It will be all right to use him for breeding when he recovers.

(There is more of a slap here at the proposition of looking after the employe carefully without caring a rap for the employer, if we size matters up properly, than a request for legal information. So, also, our attorneys believe, though we have sent their legal opinion by mail.—Editor.)

CARE OF CREAM IN HOT WEATHER.

The big profit from having clean, sweet cream in hot weather, or might put it, the losses from having milk and cream too sour, are well known. Actual practice, however, is not what it should be and the following advice from the University Farm, Davis, on the care of cream in hot weather contains information on the subject of much value:

Hot weather is an essential factor in some lines of agriculture, but it presents a hard problem to the dairyman and creameryman who handle milk, cream, and butter. When two or three exceptionally warm days prevail, the effect is noticed immediately, and unless extra effort is made to protect the product of the cow from excessive heat and high temperatures, quality will be materially impaired. At the University Farm Creamery where cream is received from local dairymen, certain patrons deliver a uniformly better grade of cream than others, a fact especially noticed when such a spell of hot weather prevails as has been the case the past few days. This is due to the manner of handling the milk and cream on the dairy and illustrates the value of good methods. One patron who furnishes whole milk, finds it possible to deliver the milk sweet by cooling it immediately after it is drawn, while another patron who is closer to the creamery and delivers as frequently, has had trouble in holding his milk in a sweet condition until delivered because of inefficient cooling. A similar condition prevails with regard to cream. Cream is received from some patrons daily, and while one lot may be received fresh and sweet, another will be slightly sour. From the standpoint of the creameryman, sour cream is not so objectionable if perfectly clean, as sour milk, for the latter can not be used, but a much better grade of butter can be made if the creamery receives the cream sweet, and is enabled to control the souring according to more ideal conditions than those found on the ordinary dairy.

The fact that cream from some dairies is so much better in quality is due to several reasons which briefly stated are, clean methods, prompt cooling, and frequent delivery, three conditions which should prevail on every dairy at all times of the year but which are absolutely essential during the hot weather. The dairyman who sells milk realizes this, but where cream is the market product, there is a tendency to give less care to this highly perishable article. If cream is to be sold, the milk should be separated as soon as drawn, and the fresh cream cooled immediately afterwards. If this is not done the animal heat remaining in it will help along in the development and growth of bacteria, whereas if cooling takes place, the heat is withdrawn, and a condition results which is not so favorable to deterioration.

At the University Farm a tank cooler has been found very effective in cooling cream, ordinary well water being used. It is possible to cool cream to within a very few degrees of the surrounding water in a comparatively short time. In the experiment referred to the air temperature averaged 89°, and the water used for cooling was at 70°. It was possible to cool milk from 100° to 75° in two hours, while milk which was allowed to stand without cooling, dropped to but 97° in the same length of time. These figures are strong argument in favor of cooling, as they represent practice, not theory. The average dairyman would be surprised at what good results attend such little effort on his part.

In building a tank it should be constructed to hold at least two cans so that freshly separated cream need not be mixed with cream already cooled, thereby raising the temperature of the latter, making a condition favorable to more rapid souring and also necessitating extra cooling. A new lot should be cooled before mixing with any already cooled. Water should enter the tank at the bottom and overflow near the top, so as to provide for good circulation and more efficient cooling, as the tendency of the water is to raise as it becomes warm. Running water is preferable, although a frequent change will accomplish much better results than letting the cans stand unprotected.

Another feature which is too often overlooked is that cans of cream are given no protection in transit. If allowed to stand in the open sun, an immense amount of heat will be absorbed, and this, together with the fact that the can is closed tight, will inevitably produce a bad flavor. By all means, dairymen, cream haulers and creamerymen, should see that some covering is placed over the cans to protect them from the sun. Then if a dairy delivery is made, dairymen can expect much better prices for their product. Experience shows that the creameries which are able to maintain highest prices are the ones which receive the best cream, and invariably it will be found that the three conditions mentioned, clean methods, prompt cooling and frequent delivery, are the factors which make for the highest measure of success. While the hot weather lasts more attention must be paid to these matters.

FEEDING SORGHUM.

To the Editor:—I have an acre and a half of sorghum corn, which is ready to be cut and would like to know if it should be cured in order to use it for cow feed, or can it be fed green.—C. D. N., Hughson.

Sorghum can be fed either cured or green. It is, however, much more valuable green than cured and had better be fed that way. It will, however, have to be cut and cured before it gets too far advanced. Sorghum is a dangerous feed if not in good condition and if it starts into wilt or suffers from drouth poison may form, as may happen if it gets over ripe. Fed green or cured in normal condition it is perfectly safe and of great value.

Live Stock Notes.

[By J. C. Loomis.]

Conant's Jerseys Replace Orchard.

The merits of Stanislaus County as a dairy center have been dwelt upon many times through these columns but perhaps no man has more ably demonstrated the benefit of pure-bred stock over fruit culture than has D. F. Conant of Modesto with his herd of Jerseys.

There are 80 acres in this ranch which was purchased some six years ago with the intention of growing fruit and as a consequence 35 acres were planted to deciduous fruits including peaches, plums, apples and apricots, also 10 acres to wine grapes. Of the remainder 25 acres were planted to alfalfa the other 10 acres to be used for grain and corn.

In order to maintain the place while the young orchard was getting its growth a few head of grade cows were purchased. With the aid of these the orchard was finally brought into bearing, but a frost caught most of the fruit crop and prices on wine grapes were very low. Seeing the future demand for purebred Jerseys and finding that his crop of butter fat never failed, it was decided to go into the registered stock business.

As a consequence he purchased a foundation at one of the Geo. Smith sales, paying the highest price realized at the sale for female stock for the two cows, Victor's Lady Dolly and Victor's Lady Kate.

As both of these cows and others of the herd had official records and the advantages of same were easily seen in the selling of young male stock, it was decided to run official tests on the entire herd, this being the second year of testing for some of them. Of the herd the two cows before mentioned are outstanding individuals and of a fine type. The cow Victor's Lady Kate is five years old and was sired by Lady Letty's Victor and out of Kate of New England. As a 2-year-old she made 437 pounds of fat. Victor Lady's Dolly is four years old and was sired by Lady Letty's Victor and out of De Laval's Dolly. At present there are 15 head in the herd including the young stock and the herd bull, Pansy's Lad a yearling sired by Gertie's Lad out of Pansy's Lily S. The dam was bred by Geo Smith and is on test with her second calf at present.

As a youngster this bull stands well up in the Jersey type and should produce some fine butter fat heifers when bred to the class of females on the ranch.

Since purchasing the pure-breds the grades have been sold and we were informed that as fast as the herd increased a larger acreage would be planted to alfalfa and the fruit taken out as the dairy was paying much better on the investment than the orchard, due to the flucua-

One point greatly in favor of Mr. Conant's future success is the official testing naut's future success is the official testing he is doing, which greatly increases the possible price of his young stock.

By having good foundation stock and putting an official record back of them he is, although young in the business, greatly ahead of some breeders who have been in the business for a great many years but have never tested. While on test these cows are being fed a grain ration consisting of 1 pound beet pulp, 3 pounds barley and 1 pound cocoanut meal twice a day together with all of the alfalfa hay they will eat.

J. K. Frazer the well known Duroc Jersey service breeder of Denair reports that his herd boar, King Golden 114919, died the first part of this month. As this boar was Reserve Champion at the California State Fair last year and the sire of many good pigs all over the State, it was quite a serious loss to Mr. Frazer. He also states that while he will exhibit at the Fair this year he may not enter anything in the aged boar classes.

Chas. Odell, the Jersey cattle and Poland China swine breeder of Modesto, states that he did not purchase the herd of registered Jerseys previously reported in these columns due to the sacrifice he would have been compelled to make on the disposal of his grade stock on account of the dry weather prices prevailing.

C. F. Daniels and Sons who are the California agents for The Human Milking Machine report that two dairies have recently installed that machine; one in Tulare County and one in San Benito County near Paicines. Users of these machines agree that they are a necessity after being in operation awhile.

Markofer, Baker and Latta of Elk Grove, Sacramento County, are among those who have selected pure-bred Holsteins for the foundation of their purebred establishment. There are 234 acres in this ranch, 22 of which are seeded to alfalfa and more will be put in next year.

Several nice looking purebreds are on the place at present, there being quite a large herd of grades milked also. The herd bull is of Pontiac breeding and was brought to California by Dr. Weldon of Sacramento last year. He will be shown as a two-year-old at the State Fair this year.

In connection with the purebred cattle it is the intention to run purebred Berkeshire hogs, there being at present several head of good looking brood sows. Mr. Latta states that it is the intention to have nothing but purebred stock on the ranch in the future and that they expect to materially increase the number now kept.

Our attention was recently called to an example in purebred hog raising which shows that there is money in the right kind of hogs properly handled.

Two years ago one of California's well known Berkeshire hog breeders sold two bred gilts to a nearby rancher for $100. As a small dairy was run on the ranch, the hogs were maintained on what otherwise would have been largely wasted or at least of little value.

Their first litters were small but when they were old enough to wean the breeder who had sold the two sows in the first place had more orders than he could fill from his own herd, so paid $125 for the two litters of pigs.

Part of the next litter was sold to the same man for $200 after they had obtained some size. At the time of our visit there were the original two brood sows and perhaps 8 young sows, besides a good many young pigs. The older breeder whom we accompanied told us that he would willingly pay $200 for the two old sows any time they were for sale.

By doing a little figuring then one finds that from an investment of $150 for two sows and a boar $325 worth of pigs have been sold and the stock on hand could be marketed for $300 or $400, or a total gross return of between $600 and $700 from the $150 investment in two years time.

Although this man's large return was due to a large extent through being connected with a well known breeder, thereby realizing much more than he otherwise could have for his pigs, the fact remains that if in choosing his stock he had selected poorer individuals on account of the cheaper prices his market would not have existed.

As it was the older breeder could recommend the stock, knowing it was of the best breeding and would be entirely satisfactory.

The instance reminds one of the saying that "You get what you pay for" and demonstrates that when one buys registered stock he should forget his pocketbook until he had selected his stock.

BETTER MARKET MILK.

The production of market milk has developed into an important industry in California and elsewhere. The most important single point about market milk is probably the prevention of any unnecessary increase in bacteria, which spoil the keeping qualities and rapidly depreciate the value of the milk. The U. S. Department of Agriculture has been working on this matter around Wheeling, W. Va., and reports some important findings, which are easy to follow and cost little or nothing, which is something that is far different from most recommendations.

The government inspector who has been working in the territory has found a simple explanation of why milk that comes form apparently good dairies frequently shows an excessive number of bacteria and is bacteriologically bad. The inspector reports that these dairies take the morning milk and combine it with the afternoon milk of the same day, and ship this combination the next morn-

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REGISTERED JERSEY CATTLE.—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

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REGISTERED HOLSTEIN bull calves for sale. H. W. Hawkinson, Perris, Cal.

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REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sole. Immediate delivery. Jno. F. Daggs, Modesto, Cal.

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CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

ing. As a result, the day's milk is kept through the heat of the day, and by the time it is 24 hours old shows a high bacteriological count.

The inspector made experiments in taking night milk, keeping it through the cooler hours of the night, combining it with the morning milk, and shipping it. There was radical improvement in the condition of this milk. In this case, the farmer ships the milk by train or electric car an hour or two later than he did under the old practice. The inspector reports that if this new system of combining evening milk with the next morning's is followed, it will go far toward solving the problem of preventing the delivery of milk that is bacteriologically bad. This plan is regarded as so important that the government will probably summon a number of milk-producers to hearings, in order to impress on them the importance of this method of shipping. This method, of course, is not practiced in all milk sections, as it can be carried out only where train schedules permit.

BUTTER SCORING CONTEST.

The regular butter scoring contest for June was held in San Francisco, June 30, and the following scores above 90 reported a few days ago.

Buttermaker, Creamery, Location,	Scores.
Hans L. Beck, Danish, Fresno	95¼
Peter Petersen, Sunset, Loleta	94¼
V. Baciarini, Suisun, Suisun	93½
Fred Harms, University Farm, Davis (Not Competing)	93¼
H. Ostergard, Siskiyou, Greenview	93¼
A. Maule, Silver Crest, Sacramento,	91½
J. C. Phillips, Delta, Imperial	91¼
Richard Nelson, Glenn County, Willows	91¼
R. McCallister, Bay City Market, San Francisco	91¼
A. Schrick, Kerman, Kerman	91
Arnold Madsen, Salinas, Salinas	90¾
F. C. Hyde, Tulare Co-op., Tulare	90½

The official butter scorer of the San Francisco Wholesale Dairy Produce Exchange assisted and it was found that there was very little difference between the scores given by him and the regular judges. The next scoring will be had some time in August at the University Farm, Davis, and the following one at the State Fair in September.

INSECT EXTERMINATION ON NATIONAL FORESTS.

The Forest Service of the Department of Agriculture has just completed a series of control projects for the extermination of the insects killing sugar and yellow pine on the National Forests. The work has been conducted in four forests, the Sierra, Klamath, Trinity and California.

In all about 3,000,000 feet have been treated or a total of 3,000 trees.

These trees have been killed by a little beetle known to scientists as "Dendroctonus" which translated means literally "Killer of Trees". That this little beetle lives up to its name is evidenced by the fact that thees 3,000 trees were killed during one summer season, and represent only a small part of the annual loss from these pests to the forests of the State of California.

This annual loss is very conservatively placed at 25,000,000 feet. It is to prevent this large loss to our mature timber of the State that the Forest Service is doing this work. Every tree treated this year means a saving of one tree next year, and one or more trees the following year, for under favorable conditions these insects increase rapidly.

As the average stumpage price of a tree ranges from $2 to $3 and the cost of treating trees is the same, the saving in timber next year will pay for the control work of this year and each succeeding year will be a clear gain to be added to the timber resources of the State.

Many of the lumber companies of the State, recognizing the saving in dollars and cents, are also instituting control projects of their own. During the winter of 1913-14 the Forest Service expects to treat a still larger number of trees.

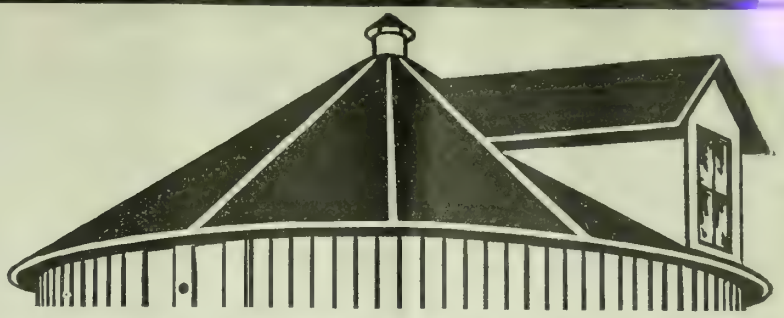
MISCELLANEOUS.

WAUKEEN STOCK FARM—Jersey cattle, Poland-China hogs. Young stock for sale. Chas. N. Odell, Prop., Modesto, Cal.

BRAE BROOK COLLIE KENNELS—Line bred tri-colors. Working prize stock. R. F. D. 69, Santa Rosa, Cal.

JERSEY CATTLE, DUROC JERSEY SWINE. Mossdale Farm. J. E. Thorp, Stockton, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire Hogs and Jersey cattle.



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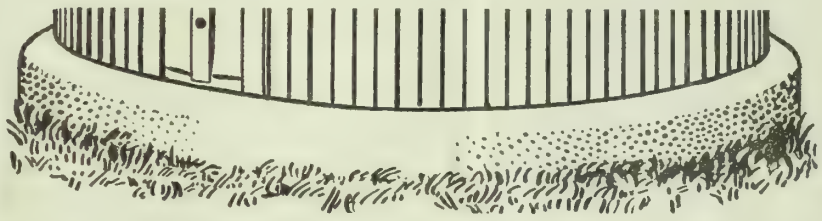

HELP PREVENT FOREST FIRES.

To the Editor: As you probably know, forest and brush fires carelessly started by campers and other mountain travelers cause considerable unnecessary damage in this State every year. Throughout each fire season the Forest Service tries to enlist the co-operation of the public by various forms of publicity. We try particularly to impress each person with a sense of his own responsibility. But in spite of all we can say, people are apt to think that the Forest Service alone has any duty regarding forest protection, and to consider that they have none. Our interest is such a special one that I believe an appeal for carefulness with fire coming from outside the Forest Service would be very helpful. Therefore, I am writing now to ask for your editorial co-operation. Your interest in forest protection, as an editor, is probably not special or professional like ours, but general, like that of the majority. Your editorials, therefore, will speak to your readers as coming from one of themselves, and will help to bring home to them the fact that it as much their duty to prevent fires as it is the ranger's duty to fight them.

COERT DU BOIS, District Forester.

DEPARTMENT OF AGRICULTURE EXAMINATIONS.

The U. S. Department of Agriculture, Office of Markets, announces examinations, August 4, 1913, for the following positions:

Specialist in Co-operative Organization.

Specialist in Transportation of Farm Products.

Specialist in Marketing Perishable Products.

Assistant in Co-operative Organization Accounting.

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"No doubt," replied Miss Cayenne, "but it is such a small blessing and such a big disguise."

How Dairymen Should Build.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

On a trip of inspection with C. A. Starkweather, Inspector of the State Dairy Bureau, during the past month we were impressed by the lack of knowledge displayed by the majority of dairymen visited in regard to the State dairy laws.

Another noticeable point brought out was the able manner in which Mr. Starkweather not only inspected the dairies, but also gave valuable advice on better methods in dairying which was eagerly sought for by most owners whom we met. With such inspectors in the field and with the aid of free literature on the subject given out by the State Dairy Bureau it is still a fact that a great many dairymen seem to be at a loss to know just what they should do in order to receive a high score by the inspector.

For the benefit of those not knowing the method used by the inspector of scoring the dairy the following description is given taken from one of the official scoring cards.

This score is rated on two departments, one for equipment and one for methods, there being 100 points possible for each department. Under the heading equipment, 12 points are allowed for health so arranged that if the animals are tuberculin tested once a year and no tuberculosis is found, or if tested once in six months and all reactors are removed the full 12 points are given but if not tested and in apparent good health 4 points are given.

If the food is clean and wholesome, 4 points are allowed. If the water is clean and fresh, 4 points are given and if convenient and abundant 4 more points are given. If the location of the stable is well drained, 4 points are given and if free from contaminating desease 8 points are added.

In the construction of the stable 5 points are allowed for tight sound floor and proper gutter, 5 points for smooth walls and tight ceilings, 2 points for proper stanchions, ties and mangers, 4 points for good light, evenly distributed, and 5 points for ventilation where no stable or strong animal odor is noticeable, making a total of 21 points for construction of the stable.

Under utensils 3 points are allowed for construction and condition, 3 points for small top milking pail, 5 points for clean, convenient and abundant steam or boiling water and 5 for milk cooler properly operated. Ten points are allowed if the location of the milk room is free from contaminating surroundings and 2 more points if convenient.

In the construction of the milk room floors, walls and ceilings are given 4 points, light, ventilation and screens 4 points, good drainage 4 points and if the room is well provided with brushes and cleaning powder 3 points more are given, making a total of 15 points for construction of milk room and 100 points for equipment, providing each subject is perfect.

Under the heading Methods, the 100 points are given credit under the following headings: Cleanliness of cows 10 points, cleanliness of stables 20 points, divided into 5 points for floor, 5 for walls, 5 for ceilings and ledges, 3 for mangers and partitions, 2 for windows, 2 for well drained barn yard, 5 for proper removal of manure daily to pit or to field 50 feet from stable and 5 for white washed stable. Ten points are allowed for cleanliness of milk room.

Under care and cleanliness of utensils 10 points are allowed where utensils are thoroughly washed and sterilized in live steam, 3 if inverted in pure air and 3 for a clean separator.

Clean dry hands in milking are given 3 points, clean milking suits 3, udders washed and dried 4. Under handling of the milk 4 points are given for cleanliness of attendants, 3 if milk is removed immediately from stable, 4 if promptly cooled after milking each cow, 4 points if efficiently cooled below 50 per cent F. and 5 if iced for transportation, making 100 points if all methods used are perfect. While it is true that very few dairies score nearly 100 in both equipment and methods other than a few who supply milk to the city trade most every dairy man could easily secure a very good score if he would give a little study to the requirements before erecting his stable and milk house for, as can be seen under equipment, 8 points are given the water supply, 12 on location of stable, 21 in construction of stable, 12 in location of milk room, and 15 on construction of milk room, and 4 on stock apparently in good health without the tuberculine test. Of the points then 72 are given on the construction and health of animals alone, all of which are easily obtained.

With such equipment it would be a very easy matter to secure a good score on methods as the most credit is given to

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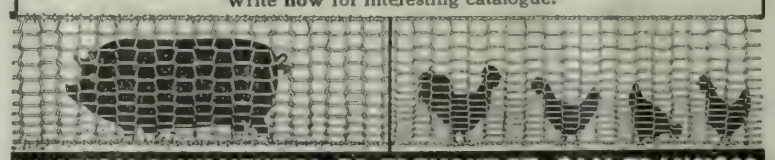

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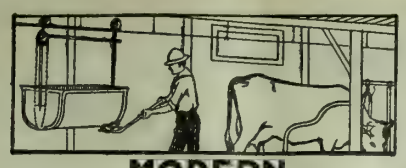

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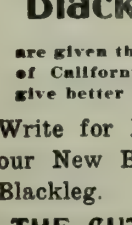

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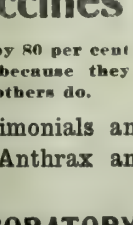


SHROPSHIRES

Pure Bred and Registered
For 1912:
140 Head Yearling Rams
150 Head Ram Lambs

Enterprise Stock Farm
H. P. EAKLE, Jr. Woodland, Cal.

HOWARD CATTLE CO.
BREEDERS AND IMPORTERS
SHROPSHIRE SHEEP
SHORTHORN CATTLE
BERKSHIRE HOGS
326 Sharon Bldg., San Francisco.

BERKSHIRES

Our herd is now one of the best in the State, being rich in **Silvertip, Black Robinhood, Longfellow, Empress and Masterpiece Strains.**

Prices reasonable, satisfaction sure Correspondence solicited from interested parties.

OAK GROVE DAIRY FARM.
Woodland, Cal.

Cutter's Anthrax and Blackleg Vaccines

are given the preference by 80 per cent of California stockmen because they give better results, than others do.

Write for Prices, Testimonials and our New Booklet on Anthrax and Blackleg.

THE CUTTER LABORATORY
P. O. Box 267, BERKELEY, CAL.

HOLSTEIN HEIFERS
3 two-year-old bred for first calf.
PENNANT DAIRY,
E. J. WELDON,
Box 962, Sacramento, Cal.

Blake, Moffitt & Towne
Dealers in PAPER
37 FIRST STREET, SAN FRANCISCO
Blake, Moffit & Towne, Los Angeles
Blake, McFall & Co., Portland, Ore.

cleanliness of methods which is almost impossible without good and convenient equipment.

While the duties of the inspector are simply to score the dairy as he finds it and to serve notices if necessary, the dairymen are fortunate in having such well posted and practical inspectors as Mr. Starkweather and the others employed by the bureau who are lending their personal assistance in putting the dairy business of the State on a higher standard and also teaching the dairyman that if he is to realize more profit from his investment he must turn out a superior product and to do that he must have better equipment and use better methods.

For the benefit of those wishing to know more of the law relative to Production and Standard of Dairy Products a bulletin on the subject may be had for the asking from the State Dairy Bureau, 25 California St., San Francisco.

STANFORD HOLSTEIN HERD BEING IMPROVED.

The Holstein Friesian herd of dairy cattle on the Stanford ranch at Vina, are perhaps as well known as any herd in the west due to the fact that for a great many years they have been bred up with the best bulls that could be purchased.

To further build up the herd a new bull was brought from the East this spring called King of the Pontiac's 14th. This is about a three quarter brother to Spring Farm Pontiac Lass, who recently made a record of 44.3 pounds of butter in 7 days and 171.15 pounds in 30 days, and who was sold to Stevens Bros. of New York for $10,000. The advantages of this bull as a sire are not only in his pedigree but he is also a promising looking show bull, a combination not often obtainable.

During the past year this herd has been in charge of Mr. Stern who is a practical dairyman and from now on it is expected to greatly increase both the quality and quantity of the registered stock yearly, cutting down the number of grade cattle on the ranch.

At present a good many grades are being milked together with registered cows as the dairy end of this ranch has to pay its own way and there are not as yet enough registered cows milking to defray the dairy expenses and care for the large number of dry stock and calves.

Speaking of calves we saw about the finest and largest bunch of purebred calves on this ranch that we have seen anywhere in the State and they certainly speak well for the methods used which are principally to give the calf all the fresh milk you can and then add a little more, skim milk not being considered the best thing on earth to feed a growing calf when it is not absolutely necessary.

The bull calves are all being raised and will not be offered for sale until such time as they are fully developed when the poor lookers will be fattened and sold to the butcher as it is not the intention to sell any animal which is at all apt to be unsatisfactory.

Although there are between 250 and 300 head of registered stock on the ranch at present, all of the heifer calves will be kept until such time as there are 300 head of heifers and young cows on the ranch.

While the herd is regularly tested, no official testing has been done for 7 years so that there are a good many excellent cows in the herd with no official records.

This seems unfortunate in view of the fact that much of this stock would no doubt make fine showings, but we were told that in the future that end would be looked after.

Needed improvements are now being sought in the way of new dairy buildings and by the time same are biult the herd will no doubt be greatly improved.

With the combination of better buildings, official testing and continual testing this herd will no doubt in the future continue to hold its reputation as one of the foremost herds in the State. Some of this stock will be seen at the State Fair this year, being the first time since 1911.

J. C. LOOMIS.

California State Fair

Sacramento, California

September 13-20, 1913

WILL BE THE GREATEST SHOW OF HIGH BRED LIVE STOCK EVER EXHIBITED ON THE PACIFIC COAST

Premium List has been enlarged so as to take care of a larger number of classes, and in some instances materially increased.

Especial attention is called to the fact that a liberal increase has been made in classifications and premiums on dairy products.

The Poultry and Pigeon Department has been revised and an increase has been made in premiums. In Pigeon Department no first premium will be less than $1.00; no second premium less than 50c.

A classification has been made for market culinary animals, providing premiums for rabbits and hares.

There has also been established boys' judging classes, and the sum of $400.00 set aside for premiums for boys who prove the best judges of live stock.

Premiums are provided for the best displays of Indian corn and spineless cactus.

Premium list is now being prepared. Send in your name now, to be placed on the mailing list.

ADDRESS, J. L. McCARTHY, SECRETARY,
State Agricultural Society,
Box 592, Sacramento, California.

A. L. SCOTT, President.

NOTES ON HUMPHREY'S GUERNSEYS.

Since more interest is being manifested in purebred stock in the State other breeds than the Jersey and Holstein are receiving recognition.

Among these are the Guernsey cattle which always are well spoken of, and seldom seen here due to the scarcity of good individuals that are offered for sale in other places. That they will be bred more extensively in the future is almost a certainty as they are one of the most noted dairy breeds.

A new herd of this breed to California were those imported by A. B. Humphrey of Mayhews, Sacramento county, during the past year. Mr. Humphrey has long been among the best known hog breeders of the State with his start of Guernseys promises to do equally as well in that line.

There are 30 head of purebreds on the place at present, headed by the bull Don Adonis of Linda Vista. This is a two-year-old sired by Jetro's May King of Linda Vista and out of Comely Rose, a cow with a record of 641 pounds of fat. He is a fine looking individual and when shown at the State Fair this year should be among the winners.

A good many fine individuals were seen among the mature cows and with this foundation Mr. Humphrey expects to increase the number of purebreds a great deal.

The ranch located near Escalon will soon be in shape for the dairy at which time this department will be run on a much larger scale than heretofore.

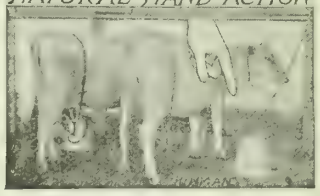
Mr. Moyer, herdsman on this ranch, states that a strong showing of Berkshire hogs will be made at the State Fair this year as well as several head of the Guernseys.—J. C. L.

TEN CENTS EACH FOR NAMES OF FARMERS.

I will pay ten cents each for names of farmers who would be interested in our two swine papers, The Berkshire World and The Swine World. Send twenty cents and the names and addresses of 13 farmers at once. For this service you will receive the two papers for one year; regular price, $1.50.

JOHN Y. BEATY,
Western Representative,
1122 Sonoma Ave., Santa Rosa, Cal.

HINMAN
NATURAL HAND ACTION



THE HINMAN MILKER
In Fifty Dairies on the Pacific Coast

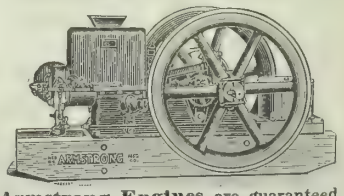
Holtville, Cal., May 22, 1913.
Chas. F. Daniells & Son.

Gentlemen: We have used the Hinman Milking Machine for ten months with the best of success. Our cows are gaining in quantity of milk as well as butter-fat. We will never do any more hand milking. We find the machine excellent for milking heifers. The 1913 valve chamber is an improvement which adds greatly to the efficiency of the machine. I know the Hinman will not injure the cow in any form, and saves labor and expense.

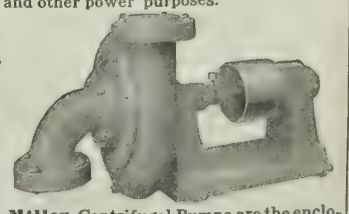
Yours truly.
J. R. McCORMACK.

C. F. DANIELLS & SON,
Agts. California and Oregon,
Modesto, Cal.

ENGINES & PUMPING PLANTS



Armstrong Engines are guaranteed for FIVE YEARS, are equipped with **Magneto** and patent roller valve gear. 1½,2,4,6,8,10,15,20-h. p. sizes. Just the Engine for pumps, saws, sprayers, grinders and other power purposes.



Miller Centrifugal Pumps are the enclosed runner, automatically water balanced kind. Greater capacity for less power. Longer life for less money. Arranged for gas engine or motor drive.
Write for catalog and state requirements.

Norman B. Miller Co. San Francisco, Cal.
503 MARKET STREET

Some Don'ts for Hot Days in the Poultry Yard.

[Written for the PACIFIC RURAL PRESS by MRS. SUSAN SWAYSGOOD]

Don't, is a poor word to use with refractory children, but with grown ups it is taken for what it means, generally as a reminder. So these don'ts are really only reminders that you should not neglect some important item that may mean dollars to you.

The last two weeks have not been merely warm, but hot, and nature is using the heat for growing an abundance of everything, regardless of its use, worth, or quality.

Last week I was much surprised at a find I made. I had just gotten through cleaning out my yards, or to be more exact, hen houses that are without floors, when I knelt down to look closer at something that appeared to be moving.

Talk about being surprised, why you could have knocked me down with a straw. Here I was cleaning out every day, and plastering the perches every morning with a mixture of crude oil, coal oil and crude carbolic acid, and yet my eyes were gazing at a moving mass of mites. Yes, sir, mites, and yet there were none on the perches, could not find any in the woodwork or frame of the house. And mind you the droppings were being cleaned up every day. Well, I did not waste much time in mourning or wondering, but got out as quick as possible for something that would make them squirm.

The material was on hand and it did not take very long to mix and get the spray pump. Then I set to with right good will and did not stop until every house had been sprayed. Then I stirred up the ground with a garden rake, mixed another pail full of the liquid and sprayed all the houses again.

This is what I used: One can of lye, half a gallon of crude carbolic acid, half gallon crude coal oil, half a gallon distillate and water to make 10 gallons. It should be well mixed and sprayed as even as possible and there will be no mite left alive that it strikes.

The only trouble is that one can never strike all of them at once, or twice, hardly at three times, so whatever medicine one uses, it must be repeated three times, at least to be effective.

With this experience fresh in mind is it any wonder that I say, don't forget to put your specks on and look mighty close in and around the chicken house or the mites will get you after all. Well I got them, but it gave me a strenuous time in very hot weather when a person doesn't feel very strenuous.

Another thing, is don't forget that while this hot weather is on, the drinking vessels must be kept clean and filled with fresh water, especially at noon time. A good cool drink is very refreshing about that time, and where shade is insufficient it is a very good thing to turn the hose on the yards in the evening, as the humid air rising from the ground helps to keep the heat down. We are surely getting our share of hot weather in the southern part of the State.

SHADE NECESSARY.—For young chicks, ducks and goslings, shade is absolutely necessary; so don't neglect to provide it, if you want your flock to grow and thrive.

Chicks will stand an awful lot of abuse, but they always show it, and in most cases they barely pay for their keep after they get to the age when they should be paying more. Goslings, on the other hand pay as they go, and if you fail to provide shelter or water they just roll over on their backs and that is the end of it, except for the funeral.

GATHER THE EGGS.—Don't forget that if eggs stand out in the sun they are deteriorating, also if they are not gathered at least once a day the heat from the hens going on to lay will at least take out all the freshness and nice delicate flavor of the strictly fresh egg.

Since writing the articles on the diseases of poultry, there has come a surprising number of inquiries concerning diseases, some of which I am quite sure has been brought on by too much doping with crude remedies. When giving anything to chickens we should take into consideration that all animal life is an advancement over mineral life and as the grosser should never be given to the finer except in cases where nothing else will act so quickly, I say don't give crude medicines if it can be avoided.

One subscriber writes me that they have been giving their young chickens a cholera, white diarrhoea and roup medicine twice a week, and that this remedy is made up of bichloride of mercury tablets and copperas. The chickens are now drooping and not healthy at all.

It could hardly be expected that they would keep healthy while having to eat such stuff as that twice a week. Copperas, in small quantities, and by small, I mean a very small amount, say a pinch as big as a pea, may be given to a dozen hens and it will act as a tonic, but its use should not be continued from

POULTRY.

S. C. WHITE LEGHORNS—Heavy layers, California's greatest prize winning strain. Eggs, chicks, stock. Send for list. M. Dutterbernd, Petaluma.

BARRED PLYMOUTH ROCKS, White Minorcas, White Holland turkeys. Stock and eggs only. L. N. Cobbledick, Oakland.

ORPINGTONS, BUFF AND WHITE—Summer sale of stock. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

FOR SELECTED EGGS AND CHICKS from S. C. White Leghorns, see Hopland Stock Farm advertisement.

CROLEY'S PIONEER EGG MAKER—Makes poultry pay when egg prices are low.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

WHITE LEGHORNS—Chicks, eggs, cockerels. Fine stock. Reasonable. O. B. Morris, Lodi, Cal.

BRONZE Turkeys and Eggs. Ed Hart, Clement, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal. — Buff, White Orpington.

CROLEY'S HIGH GRADED HARD SHELL —The leader in poultry shell.

Prepare for Egg Production
Get a good supply of
COULSON'S EGG FOOD
and begin to condition your hens for a big production when prices are high in the fall. Start in time to get the egg machinery working right when you make the greatest demand on it.
COULSON POULTRY & STOCK FOOD CO.,
Petaluma, California.

PENNANT STRAIN
BARRED and BUFF
PLYMOUTH ROCKS.
A few choice cockerels and pullets left. Eggs for hatching after January 1st.
JAS. M. MONTGOMERY,
4860 Fleming Ave., Oakland, Cal.

For Egg Profits you should use
HIGH PROTEIN
Meat Meal Bone Meal
Blood Meal Oyster Shell
Mixed Meal and Bone
Ground Bone
Ask our dealer, or write us, sending his name.
PREMIER POULTRY FOODS
"Good as the best Cheaper than the rest."
Ask us about the
"C. E. F."
POULTRY FOUNT
It saves expense and prevents disease.

UNITED PHOSPHATE CO.
1023-4 Story Bldg. Los Angeles, Cal.

Hopland Stock Farm
POULTRY DEPARTMENT
ATTENTION POULTRYMEN: Having decided to devote our entire time and attention to the breeding of Hopland Strain of S. C. White Leghorns and White Wyandottes, we are going to offer to the public our entire flocks, both old and young, of White Orpingtons, Barred Rocks and S. C. Rhode Island Reds. Here are some rare bargains in these varieties and they will not last long at the price offered. Write at once.
Hopland Stock Farm, Hopland, Cal.
POULTRY DEPARTMENT

FAIRMEAD
for alfalfa
Every requirement for a profitable alfalfa home for you is fond at Fairmead.
8 to 10 tons per acre yearly.
Rich sandy loam soil.
Healthful climate.
Good neighbors.
Excellent for olives, figs, etc.
On S. P. R. R., 5 hours from San Francisco
We are now subdividing 19,000 acres into 10, 20 and 40-acre tracts. Low prices, easy terms. Send for booklet "R."
Co-Operative Land & Trust Co.
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Every farmer when in the city should visit the Exhibit of the
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See at a glance what California produces.
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Get authoritative statistics on crops.
Get reliable information on any subject to do with land and farming.
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CALIFORNIA DEVELOPMENT BOARD
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One Man can run it.
BIG MONEY in the OFF SEASON
Earn $2000.00 a year extra money, besides your regular farm work, with the
Improved Powers Boring and Drilling Machine. Bores a well 100 ft. deep in 10 hours. One man can run it; a team operates it and easily moves it over any road. Bores everything except hard rock, and it drills that. No tower or staking; rotates its own drill. Easy terms; write for catalog.
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Circular containing 100 mechanical movements mailed free.

FARM BOOKS.
The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Hog Book, Dawson	1.60
The Dairy Farm, Gurler	1.10
Greenhouse Management, Taft	1.50
Mushroom Culture, Falconer	1.00
The Study of Corn, Shoesmith	.50
The Hop, Myrick	1.50
Meadows and Pastures, Wing	1.50
Trees and California, Jepson	2.50
Asparagus Culture, Hexamer	.50
New Onion Culture, Greiner	.50
American Cattle Doctor, Dadd	1.00
Home Pork Making, Fulton	.50
Farm Gas Engines, Brate	1.10
The Book of Alfalfa, Coburn	$2.00
Swine in America, Coburn	2.50
Feeds and Feeding, Henry	2.25
Farm Development, Hays	2.00
Manual of Laws	2.25
Farm Buildings	2.20
Breeding Farm Animals, Marshall	1.60

Send remittances to
PACIFIC RURAL PRESS,
420 Market St., San Francisco.

week to week, but say, give for three days, then drop it for two weeks when it may be given three days more and then dropped. Blue stone and copperas are somewhat similar in action with fowls.

When in doubt it is a good thing to give a dose of castor oil or olive oil, and it will nearly always remove the trouble. Anyway, don't be in a hurry to give such things as bichloride of mercury, for they are very crude and very strong medicines, and like eggs for hatching, they should be marked "handle with care."

Don't forget that green feed is the most healthy feed you can give either old or young chickens and that nothing in the vegetable line should be allowed to go to waste. Things that are past feeding green can be cooked and made into palatable meals with a little bran and meal. A good patch of kale or some kind of tall greens that answer for both shade and feed is really the best plan for hot weather but not everybody can provide such a luxury for hot days.

MUSTARD.—Kale, rape, or mustard are all good as they grow up tall and thick, and the poultry do really enjoy it. There has been so much said in the different poultry journals of late, about mustard for poultry that I determined to try it as an experiment. This means the dry poultry mustard, not the green feed. Well, I did find out what it was worth, at least to me, and that was nothing. It may increase the egg yield, in fact I am convinced that it does stimulate the egg organs, but it causes a looseness of the bowels, and I think if its use was continued any length of time it would end in a chronic looseness of the bowels akin to diarrhoea. So one trial is enough for me and I for one don't intend to use any more of it. Green mustard is so much better in every way that we should all try to get some started ready for the winter months as that is when mustard is most needed for egg production.

CULL OUT THE DRONES.—A great many hens are commencing the molt this month and this is one of the best times to cull out the non-producers, as it is the hen that lays way late that is worth propagating and keeping. Unless there is some reason for an early molt it is safe to cull out hens that quit laying just as soon as they commence the molt. A good laying hen will continue to lay until the new feathers absorb most of the nourishment, and if the hens are fed plenty of feather making material, they will lose very little time even then.

Plenty of green feed helps them both in shedding the old feathers and growing the new, not forgetting bone and meat products. Cracklings are fine sunflower seed, flaxseed meal and any oily or greasy food in reason, but of course excess of anything of that nature causes looseness of the bowels. Sprouted barley is among the best feeds for helping the molt along, it loosens the feathers better than any other grain food that I know of, and keeps the fowls in good health at the same time, and that is what we should aim at. Not everybody can get one thing, but most all can get barley, and sprout it, if they will take the trouble. During the hot weather, don't forget to stir it often. If it is put to soak in a sack, just take the two ends of the sack, one in each hand and shake two or three times a day and wet it as often; it won't take long to grow sprouts.

Oats sprout much slower, and while they are good for laying, I don't think they are quite as good for helping the molt as is barley, but as I said, it must be stirred often or it spoils.

CLASSIFIED ADVERTISEMENTS.

Rate 2c. per word. No order for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

POSITIONS WANTED

LAND SUPERINTENDENT, thorough in all lines of farming, fruit growing and irrigation, is open for engagement; experienced in working all kinds of labor. Address Box 6, Pacific Rural Press.

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FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

CONSIGNMENTS WANTED—Dried fruits, nuts, honey, beeswax, beans, eggs, butter. Our methods are conservative and returns prompt. J. E. LAWRENCE, 326-328 Clay St., San Francisco.

LAND FOR SALE.

CALIFORNIA LAND—Send for catalog. Properties in all counties. Valuable, reliable information. C. M. Wooster Co., Phelan Bldg., San Francisco.

TREES AND NURSERY STOCK.

NURSERY TREES, fruit and ornamental. Nearly all varieties to be seen on our experimental place near State highway. LEONARD COATES NURSERY COMPANY, Morganhill, California.

CASH NURSERIES—Burbank cactus a specialty. Trees of quality. Sebastopol Cal.

MISCELLANEOUS.

FOR SALE OR EXCHANGE—The Imported Percheron Stallion Sansonnet. This horse is 8 years old, steel gray, and weighs 2000 lbs. Is a sure foal getter, and has colts that will compare favorably with any in California. He cost us $3600 when two years old; will sell him now for $500, or exchange him for dairy cows; am in the dairy business and have no further use for him. D. B. THOMPSON, Modesto, Cal., Route No. 4.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin, it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco.

FOR SALE—200 tons of burr and sour clover hay, well salted and put up right; am feeding it to dairy stock now and it gives perfect satisfaction. Price in carload lots only $9.00 per ton f.o.b. Zomaro, Yolo county, Cal. Address V. A. PETERSON, Blacks Station, Cal.

Send 10c for a copy of the "biggest little financial treatise in the world," "Dollars Want Me!" to HENRY HARRISON BROWN, Glenwood, Cal. Copy of the most progressive phychological magazine sent free with book.

PAY YOU to place your orders NOW for sheep manure or other fertilizers for fall delivery. H. B. MATTHEWS, Soil Chemist, 733 Merchants Exchange, San Francisco.

To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay St., San Francisco.

REFUSE LIME—300 tons for fertilizing, in carlots, at low price for a quick sale. H. B. MATTHEWS, 733 Merchants' Exchange, San Francisco.

Ask about irrigation wells drilled anywhere or renewed by our new method. J. E. Breitwiser, Alameda, Cal.

GASOLINE OR ELECTRIC PUMPING PLANT.

To the Editor: I am contemplating putting in a pumping plant and would like your valued advice in regard to same. What I wish to decide is whether gasoline or electricity is cheapest, all things considered.

I would have a lift of about 25 feet. The electric rate for a four-month period would be $18 per horsepower for daylight service and $25 for 24-hour service. Of course a reservoir and 24-hour service would be the cheapest, but it might be impractical here. Distillate costs 9 cents per gallon on an average.

About what size pump and motor would it take to irrigate 25 acres of alfalfa when pumping direct?

I have read with interest the articles in the Rural Press pertaining to irrigation. I wish to thank you in advance for any light you may give me in regard to this. —Subscriber, San Luis Obispo.

Answer by Kerns-Sessions, San Francisco.

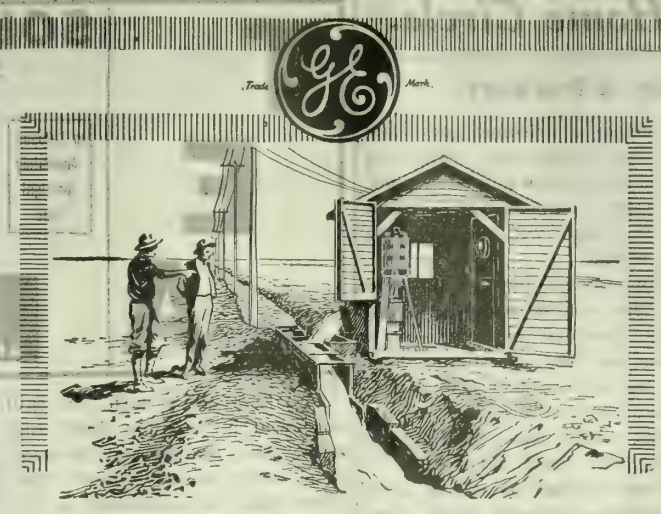
You have not given all the necessary data to be considered in determining which is cheaper, gasoline or electricity; and for this reason, your inquiry can be answered only in part by general statements, after assuming certain conditions.

Assuming that you will use from four to six inches in depth of water per acre for each irrigation and that you must complete this irrigation within twenty days, you would need a flow of about two hundred gallons per minute, running twelve hours per day. This is about the capacity of a three-inch pump. For a thirty-foot head (total), this would require about three and one-half horsepower, and you would have to have at least a five-horsepower motor. The power company would probably not connect up any smaller motor than this. If you used a reservoir, with a pump of half this capacity, running twenty-four hours, your pump would be very small. The efficiency of these small centrifugal pumps is very low and this loss in efficiency would offset any gain in the power rate due to twenty-four hour service.

Unless you intend to use surface irrigation pipe, or very small checks, you will find that an irrigating head of two hundred gallons per minute would be very unsatisfactory. If your soil is at all sandy, you will find that it is almost necessary to have at least four or five hundred gallons per minute. This is the capacity of a four-inch pump, and for this head, you will need a seven and one-half horsepower motor or an eight-horsepower gas engine.

Whether the cost at the end of the year for a gas engine would be cheaper than the cost for an electric motor, depends upon how long, during the year, you would run this pump; who would run it; and just what value personally, you place upon the convenience of electric power. Without going into detail, it seems, that because the motor is not being run as nearly continuously as it should be run to get the advantage of the cheaper rate; and because your motor, from other considerations is larger than would be necessary, that a gas engine, at this low cost for distillate, may be cheaper; particularly so if you buy a second-hand gas engine, thus keeping down the first cost of your plant. There are reliable firms now who handle second-hand gas engines, and after thoroughly overhauling, guarantee them.

The reliability and convenience of electric power have come to be valued so much however, that the small difference in cost of power between the gas engine and the motor is nearly always overlooked in favor of the motor. With the extension of power lines into all parts of the State, and with the possibility of cheaper electric power, due to State regulation, it would seem that from general considerations in your case, it would be well for you to follow the general trend and use electric power.



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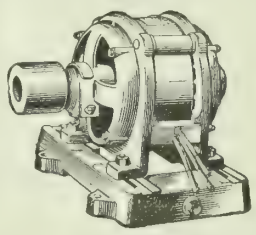

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Polly: A True Story.

Polly had been a prisoner for sixty years when I first knew her. Polly had not behaved badly; she was just a poor, old, lonely—very lonely—gray parrot with a red tail, and without a single friend in the world.

Polly had had several owners and several cages. The owners were all alike in this: they provided her with such water and food as they considered good for a parrot, and occasionally they cleaned out her cage; but the prisons were all alike in having strong bars, so that, try as she would, Polly could never make a way out. It was strange she never gave up hope of breaking through those bars, but she never did; and day after day and hour after hour she would pull them with her strong beak, and bite them, and even twist and bend them in her efforts to get through.

People who are always shut up not only get ill, but also get bad-tempered. It was the same with Polly. Her temper was so bad that, if you put a finger near the cage, she would dart her head through the bars and bite that finger till it bled.

When she was just over her sixtieth birthday, she found a friend; and who should it be but a great, strong, noisy schoolboy! Polly's mistress came to pay a long visit to this schoolboy's mother, and she brought polly with her. That day, when the schoolboy raced into the house with his two brothers, he was astonished to hear ugly screams coming from the kitchen. His mother told him a parrot was making the noise, and she had screamed so much they had to carry her down to the kitchen and cover her cage with a duster.

Polly hated her cage, and she hated the duster, and she was so angry that she was biting the duster into dozens of holes. I think, perhaps, the big schoolboy was so fond of freedom himself that he pitied the lonely parrot. At any rate he whipped off the duster, and he said," What a jolly bird!"

Polly stood quite still, and turned a wicked eye on the boy.

"Don't go too near," said the mother. "She bites."

"But, mother," said the schoolboy, "the book we read at school says parrots like you to scratch their heads, and you have to say 'scratch a poll, Polly,' and then you scratch, and I'm going to do it." Before his mother could stop him the schoolboy's hand was inside the cage through the cage door, and, before the astonished Polly could bite, her gray head was being gently scratched!

Never in all her sixty years had Polly met anything like it. People never came near to her, they used to get away from her. Here was someone not afraid of her—some one who had actually come inside of her lonely prison. Polly was delighted. She did not think of biting: she simply waited with her head held down, and, when the boy began to draw away his hand, instead of darting viciously at it with her beak, she opened and shut her wings, and made queer, soft little noises in her throat, as though she was talking to him. He did not seem a bit surprised, and said,—

"She is a jolly bird, and it is all bosh about her temper."

Polly's mistress said, "I never dare give her a bath, because I should have to put my hand through her cage door to lift it in, and she would bite my hand; but I can give her seed and drinking water from the outside."

The schoolboy very much enjoyed his bath each morning, and he thought it was hard upon Polly sne could not have one, too.

"I'll give her a bath," he said, and he borrowed an old pie dish, and filled it with water, and opened the door, and put it in. Polly was delighted! The dish was white like her seed-dish, so she was not frightened; and, with this wonderful friend standing by her and whistling a tune to encourage her, she came down from her perch and had a great bath. I cannot tell you, when she had one before; at any rate she did the thing well this time, for she sent the water in showers outside her cage; and she splashed the boy, and the plates on the dresser, and some people say she splashed the ceiling, too.

The boy only laughed, and said: "Just look at that! Isn't she happy?"

Then, when Polly looked the strangest, wettest, thinnest object you ever set your eyes on, the boy took the bath away, and carried the cage out of the kitchen into the glorious sun. This was an event! Never had she been out of the house before, except when she went on a journey, and then her cage was covered with a green-baize cover, so that she could not see anything.

Now the dripping Polly could dry herself in the sun, and see the trees, and feel the soft wind. Polly was delighted!

She took little short runs up and down her perch. She clambered up and down the sides of the cage. She whistled. She called. She preened her wet feathers. And presently she dried into a clean, sleek, handsome bird.

Next day, before the boy went to school, he said: "Parrots love to sharpen their beaks by tearing wood to pieces on the trees as they fly about. I shall give Polly a stick of firewood to play with."

So he brought a thick stick and opened the cage door, and scratched her poll, and stroked her soft back, and then gently handed her the stick. Polly had once been terrified by sticks, as one of her owners used cruelly to poke her with one, but already she loved this boy and trusted him. She gently nibbled his finger and kept making those soft little notes in her throat as if she were talking to babies, and presently she took the stick from him. Once more Polly was delighted! She stood on one leg and held the stick in her other claw, and she tore it all into shreds and spent a very busy, happy morning over it.

Now began a new life for poor Polly. The schoolboy taught her to whistle tunes and to repeat whole sentences: he gave her fruits and seeds she had never had before, and a bath every day. When his step sounded outside in the garden, Polly heard it before anyone. We used to say: "Look! Polly hears Selwyn coming." She would crouch very low on her perch, stretch out her neck, and all her feathers, would lie down quite flat; her wings would spread a little, and sne would begin a series of long shrill whistles which the boy would begin to answer at once before he got into the house. We used to say, "Listen! Sel and Polly are talking to each other."

When Polly's mistress went away, she gave Polly to the friend she had found. The schoolboy could not be content to let her stay in her prison. "She must come out a part every day," he said. At first he used to leave the cage door open and call her, and she would quickly follow him, but she could not fly. Her wings had been folded so long, she had lost the power of using them.

She could walk, and she did, following after him wherever he went, and, if he went too fast, she would call; and when he stopped and gave his hand, she would mount, and slowly, by means of bill and feet, she would climb to his shoulder. When nestled close to his face like this, she was perfectly happy, and would try to feed him as mother parrots feed their young ones!

Polly's nature was not in the least changed to any one else, and I well remember she would chase the rest of the boys and girls round the room, trying to peck their legs. She never could go fast, but had a clumsy way of putting one foot over the other, and she used her bill almost like a third foot, especially in climbing.

I used to be in terror of her when she was loose.

She climbed very well indeed, especially if a cloth of curtain was hanging beside the place she wished to climb to, and she could hold this. She made great holes in everything with her sharp bill, and she would tear the legs and other parts of furniture to pieces unless she was watched. Whenever she became suddenly

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very quiet, we knew she was up to some mischief. She could talk and whistle and laugh, and she would sway her body to and fro, while chuckling and laughing, as though she really understood and enjoyed the joke.

Her wickedest trick was to get into the coal-scuttle and pitch the coal out all over the carpet! She made for the coal-scuttle directly she caught sight of it, and we had to carry it right out of the room when she was loose, or she would get into it. I believe she was really trying to take a dust-bath just as our little wild English birds do.

Poor Polly! She missed the happy natural life she was intended to have with her own mate and her little family. The boy would gladly have set her at liberty, but she could never have lived in England except as a cage bird.—M. A. Wigley, in "Little Animals' Friend."

Bedrooms and Beds.

One great improvement that has taken place in the plans of houses in the last twenty years is in regard to bedrooms. Instead of the little rooms just large enough for the bed, wash stand, and possibly two chairs, we now have large, airy rooms in which the bed can set without being crowded into a corner.

While sunlight is a good thing, we don't want too much of it in hot weather. Our bedrooms may be made fresh and sweet by opening them early in the morning so that the fresh air, and if possible, the sunlight, may reach every corner, and then closing them before the heat of the day comes on, and opening again after the sun is low. I like east windows in a bedroom, so they may have the morning sun. When airing the bedroom, do not forget to open the door of the closet, so that may be freshened, also.

One of the first things to teach children, boys as well as girls, when they are old enough to have a room of their own, is to set a chair at the foot of the bed, turn the bed clothes down over it and open all the windows as soon as they are ready to leave their room in the morning, unless a storm forbids it. Boys as well as girls should learn to make their beds. It will often prove a very convenient accomplishment in after years.

A good, woven wire spring with a hair mattress makes an ideal bed, and will do much toward wooing "tired nature's sweet restorer." The springs will sometimes black the mattress, but slips made of muslin will protect the mattress from this and also from the dust. An old, thin quilt laid over the mattress under the sheet will protect it from the exhalations of the body, and can be easily washed.

Blankets need not be washed oftener than once a year, if always protected from contact with the body, but they should be put out in the sun and air for an hour or two, once a week.

The slats and under parts of the bedstead should be dusted and carefully examined every week, lest some nocturnal visitors appear. If, despite all your care, these pests make their appearance, as they sometimes will even in the best-regulated families, only untiring vigilance will rid you of them. A varnish brush and a dish of gasoline are valuable aids in the warfare, which should never cease for a day until the last trace of them has vanished.

Soiled clothing ought not to be left either in the bedroom or adjoining closet. Keep the soiled-clothes hamper either in the attic or wood shed, and see that every article is dry before being put into it.

The Lady—What's the new curate like, John?

John—The queerest figure o' a little man you ever saw. They tells me as 'ow the only wearing apparel 'e can buy ready made is his umbrelly.

Grant's Coolness.

Once while Grant was in command of the army, a teamster who was beating his horses in a terrifically cruel manner, was surprised and, if possible, additionally enraged, by the sudden appearance of a small unassuming man in military coat, with no badges upon him to indicate his rank. The small, unassuming man had appeared for the purpose of telling the brutal driver that he was an unmitigated scoundrel, and ought to be ashamed of himself.

The driver immediately turned upon the intruder, asked him with an oath what business it was of his, and went on beating his horses. It was not many minutes before the hands with which he had performed the cruel action were hung up by the thumbs, and he was promising to be more careful in the future.

On the notable occasion between Long Branch and New York, when the car in which he was riding jumped the track and was finally dumped into the ditch, a passenger noticed one of the occupants of the coach rise quietly, place a hand on each of the two car seats on opposite sides from each other, and stand on tiptoe till the final crash came. "That man knows what he is doing," thought the passenger, and imitated the cool stranger, who proved to be Grant. Neither of them was hurt, though several, who clung to their seats, were "badly shaken up," and some killed.

When under fire, he is said to have been one of the coolest of all soldiers. Like Napoleon, he seems to have believed that the bullet to kill him had not yet been cast, and conducted himself accordingly. "Almost everybody else I ever saw," said Gen. Porter, who for a long time was with him almost constantly, "would dodge a little when amid a storm of bullets; but Grant never flinched to either the right or the left."

Value of Character.

The greatest asset we can possess is character. The honest man or woman in any vocation in life is the one who is sought after. In the daily activities of business life the honest man is in demand. He may have many excellent qualities but the one thing to be cherished above all else is unquestionable integrity. In business, confidence is the corner-stone. Upon it the employer and employee can grow and develop. Let a man be thought to be worth watching, or let him come under the bane of suspicion and his commercial reputation is seriously impaired.

For Boils.

Apply the following:

Thymol	1 in 100
Iodine in scales	3 in 100
Alcohol	100

As soon as dry, apply collodion to the skin all around the boil, leaving the central portion free. Apply both of these three times daily, removing the collodion before each application.—Pacific Medical Journal.

Robby—I think I like you better than any of the other fellows that come to see sister.

Percy—I'm pleased to hear it, Robby. Why do you like me the best?

Robby—Because sis always lets me stay around and hear what you say.—Judge.

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THE MARKETS.

San Francisco, July 16, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Crop conditions have caused a weaker feeling in the Eastern markets, which is to some extent reflected here. Both local and Northern Club and Forty-Fold are quoted lower, and there is very little demand locally.

California Club, ctl	$1.57½@1.60
Forty-fold	1.62½@1.67½
Northern Club	1.57½@1.60
Northern Bluestem	1.72½@1.77½
Northern Red	1.60 @1.80

BARLEY.

Arrivals of new barley are increasing, but so far most of the receipts have been on old purchases, and spot offerings are light. Some new grain is being sold to arrive, and prices stand about as before, though little if anything can be sold above $1.32½, buyers and sellers being still somewhat apart in their views.

Brewing and Shipping	Nominal
Choice Feed, per ctl	$1.30 @1.35
Common Feed	1.27½@1.30

OATS.

The former range of prices still holds, though there is a little more firmness in white oats. The movement is light, and there is no very large quantity offered on the spot.

Red Feed	$1.65 @1.85
Seed	Nominal
Gray	Nominal
White	1.55 @1.60

CORN.

Kaffir corn is quoted slightly higher, but there is no great amount of business in this variety. California and Eastern yellow are steady and quiet at the old figures.

Cal. Yellow	$1.55 @1.60
Eastern Yellow	1.50 @1.55
Eastern White	Nominal
Kaffir	1.55 @1.60
Egyptian	1.70 @1.75

RYE.

Rye is little more than nominal, with light offerings and very little demand, but the old prices are asked for all desirable lots.

Rye, per ctl	$1.45 @1.50

BEANS.

The bean market in general stands in about the same condition as last week, with no quotable change in prices. Trading is quiet, but there is a gradual movement of small lots all the time, and some varieties are getting quite scarce. Inquiry for the colored varieties has been increasing of late, and these lines lead in firmness, though Manchurian beans also are strong, selling locally around $4. Small whites are steady at the old figures. Limas are a little easier in the local market, with very favorable crop reports from the growing district, though spot supplies are light.

Bayos, per ctl	$3.15 @3.25
Blackeyes	3.15 @3.35
Cranberry Beans	4.70 @5.00
Horse Beans	1.90 @2.15
Small Whites	5.50 @5.70
Large Whites	4.50 @4.75
Limas	5.75 @5.90
Pea	Nominal
Pink	3.00 @3.20
Red Kidneys	3.40 @3.60
Mexican Red	3.75 @3.80

SEEDS.

There is no business worth mentioning in any line, and prices stand as for some time past. Alfalfa is altogether nominal in the absence of business, though supplies are held at the old quotations.

Alfalfa	12½@ 14c
Broomcorn seed, per ton	$27.00@28.00
Brown Mustard, per lb	3¾c
Canary	6 @ 6½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

Prices are steadily held at the same level as for several months past, with nothing to indicate any change in the near future. Business is of about normal proportions for this season.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.60 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Arrivals for the week have been quite heavy, considerably in excess of the week previous, and the effect of the continued crowding of supplies into this market has been to force down the local prices, especially on the medium grades. Anything that will grade as strictly fancy would find ready sale at high prices, but there is hardly any hay of this class to be had. For ordinary grades there is still very little demand, local buyers preferring to hold off a little longer, though supplies still held by growers in the country are above the range of this market. Alfalfa continues to move well in the interior, where good prices prevail, and there is considerable business here. Crops are turning out well, and while there is a heavy feed demand dealers are buying only for immediate needs.

No. 1 Wheat, or Wheat and Oat	$17.50@19.00
do No. 2	15.00@17.00
Lower grades	14.00@15.00
Tame Oats	15.50@19.00
Wild Oats	14.00@16.50
Alfalfa	12.50@14.00
Stock Hay	9.00@11.00
Straw, per bale	45@ 95c

FEEDSTUFFS.

Most descriptions remain steady as last quoted, though rolled barley and oats are somewhat lower, with increasing supplies.

Alfalfa Meal, per ton	$20.00@21.00
Bran, per ton	27.00@28.00
Oilcake Meal	32.50@33.00
Cocoanut Cake or Meal	25.00@26.00
Cracked Corn	34.00@35.00
Middlings	34.00@36.00
Rolled Barley	28.00@29.00
Rolled Oats	34.00@35.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Fancy yellow onions from the Clarksburg district are quoted somewhat higher, and river stock is moving off fairly well at the old prices. Several lines of garden truck are somewhat firmer, at least for desirable stock, which has been scarce the last few days on account of the recent hot weather. Good summer squash is considerably higher, and cucumbers have also been advanced sharply, with unusually light arrivals. There is plenty of green corn in the market, and ordinary lots from some distance sell at 50c to $1, though all choice stock from around the bay is higher. Merced tomatoes are about as before, but large lugs from the river are becoming plentiful, and a decline is expected. Asparagus is a little higher. Lima beans are fairly abundant, with much lower prices, while peas and string beans are easy at the old prices. Green peppers are lower, with large offerings. Cabbage and carrots are in limited supply at present, and show a sharp advance.

Onions: fancy, ctl	$1.10@ 1.20
New Yellow, River, sack	65@ 75c
Garlic, per lb	3@ 4c
Cucumbers, per box	85c@ 1.00
Cabbage, per ctl	1.00
Carrots, per sack	1.25
Cauliflower, per doz	40@ 50c
Green Peppers, box	50@ 60c
Green Peas, lb	2@ 3c
Asparagus, box	1.00@ 1.25
String Beans, lb	2@ 4c
Summer Squash, lug box	85c@ 1.25
Green Corn, choice, sack	1.25@ 2.25
Okra, box	75c@ 1.00
Tomatoes, Merced, box	35@ 50c
Eggplant, box	85c@ 1.00
Lima Beans, lb	4@ 5c

POTATOES.

A good many new sweet potatoes are now coming in, and find a fair demand at the prices quoted. Some old Oregon potatoes are still offered, and new river and San Mateo potatoes are higher, with quite an active demand and little surplus over current needs.

Oregon, ctl.	85c@$1.00
New River Whites	1.00@ 1.25
San Mateo	1.55@ 1.75
Sweet Potatoes, per lb	2@ 3½c

Dairy Produce.

POULTRY.

All lines of chickens show a sharp advance, as Eastern stock has been coming in very slowly for the last fortnight. California chickens are coming forward fairly well, but arrivals clean up very readily from day to day, and the quoted figures are firmly held. Geese and ducks are also a little higher.

Large Broilers, per lb	23 @24 c
Small Broilers, per lb	23 @24 c
Fryers, per lb	23 @25 c
Hens, extra, per lb	15 @16 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	15 @16 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	24 @25 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.75@ 2.25
Ducks, doz.	4.50@ 6.00
Turkeys, live	21 @22 c

BUTTER.

After getting up to 29c, extra butter has dropped back to the level of a week ago, but is quite firm at this figure. Arrivals are light and are mostly needed for local use, though there is still a light movement into storage.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	28½	29	28½	28½	28½	28½
Firsts	28	28	28	27½	28	28

EGGS.

After standing at 24½c for several days, extras are again up to 25c, notwithstanding rather large arrivals early this week. The amount of strictly extra stock is limited, and this grade is firm, though pullets are only steady at ½c decline.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	24½	24½	24½	24½	25	25
Firsts	22½	22½	22½	22½	22½	22½
Selected Pullets	21½	21	21½	22	22	22

CHEESE.

Fancy flats are hardly as plentiful as for some time past, and have advanced 1c, being firm as quoted. Y. A.'s are steady as before, while Monterey cheese is a little lower.

Fancy California Flats, per lb	16 c
New Young Americas, fancy	17½c
Monterey or Jack Cheese	14@15c

Deciduous Fruit.

While offerings in some lines are increasing, the demand for fresh fruits is good and prices are well maintained for this time of year. Strawberries stand about as before, with some stock going to canners at the inside figure, while other lines of berries are higher, and currants are cleaning up. Huckleberries are more in evidence, though prices are still quite high. Cherries are higher, with diminishing supplies, and except for Oregon fruit most offerings are in bulk. Apricots and peaches are lower. The former are quite plentiful, with most offerings in rather unattractive condition, and some stock is going to canners at a range of $20 to $40 per ton. Peaches find a very good demand, and desirable offerings are readily disposed of as quoted, baskets bringing 75c to $1. Plums show a wider range, with large supplies of ordinary stock going at irregular prices, though choice varieties are higher than before. Apples are beginning to pile up, and are inclined to easiness, with Red Astrachans a little lower. Choice wrapped Bartlett pears are steady at the old figures, with ordinary lots selling around $1.25 and culls down to 75c. Offerings of figs are moderate at the moment, with large boxes from up-river points selling up to $1.75. Cantaloupes are accumulating again, and prices are lower, watermelons also showing a drop, though the demand for all lines of melons is good. Grapes are appearing in quotable quantities, the movement being principally of the seedless variety so far.

Loganberries, chest	$ 5.00@ 7.00
Blackberries, chest	3.00@ 4.00
Huckleberries, lb.	22½c
Raspberries, chest	5.00@ 7.00
Currants, drawer	1.15
Strawberries:	
Longworth, chest	5.00@ 8.00
Other varieties, chest	3.00@ 6.00
Apples:	
New Gravensteins, box	1.25@ 1.75
Astrachans	1.15@ 1.50
Pears, Bartlett, box	$ 1.25@ 1.75
Other varieties, large box	1.25@ 1.50
Cherries: Oregon, per box	1.00@ 1.25
Bing, in bulk, per lb	11@12½c
Black, lb.	7@ 10c
Royal Ann, lb	7@ 10c
Apricots, crate	65@ 85c
do lug box	1.00@ 1.25
Peaches, box	65@ 85c
Plums, crate	75c@ 1.25
Figs, box	1.00@ 1.75
Cantaloupes, large crate	1.25@ 2.25
Watermelons, per dozen	1.00@ 2.50
Grapes, Seedless, crate	1.75@ 2.00
Malaga	1.25@ 1.50
Fontainbleau	75c@ 1.00

Dried Fruits.

The dried fruit market is even quieter than last week, the hot spell having caused some delay in buying of the new crop. The effect has been principally on prunes, as growers in the Santa Clara district report heavy damage, and are reluctant to sell at present figures, while packers are willing to wait until the damage is definitely known. It is estimated that about 30% of the new apricots have been sold at prices about in line with the quotations below, but business has now dropped off, and an easier feeling is reported. A little better feeling is reported in peaches, and it is believed that prices are about as low as they can be, though there is not much prospect of advance. The demand is limited, and with quite a large hold-over from last year, buyers are inclined to wait. The New York Journal of Commerce says:

"There continues an exceptionally good demand for this time of the year for spot prunes of California and Northwest production. No important sales are being made, but the inquiry for small lots to cover immediately consuming requirements are numerous and the spot market, which is being steadily cleaned up, is firmer. While spot goods are getting quite a little attention, futures are neglected at the general four-size bulk basis price of 4⅛c f.o.b. Coast for October shipment. Likewise offerings for future California prunes are neglected by buyers at this end.

"In spot peaches and apricots the movement is still slow, but in sympathy with reports from the Coast the feeling among local holders is firm. Coast advices reflect a firmer feeling in growing and packing quarters, but in the absence of important demand prices are more or less nominal.

"Late reports from the Coast indicate that all but one or two of the commercial packers have joined with the Associated Raisin Company, representing a large majority of the growers, in the attempt to put the California raisin market on a stable basis. Little support for this movement is being offered as yet by Eastern buyers, though they all agree that the favorable outcome of this effort to put prices on a uniform basis would be of great advantage to everyone concerned in the industry from the grower to the retail distributer. However, as long as any packing house remains outside and is offering to undersell the Associated prices half a cent buyers are inclined to wait."

Evap. Apples, 1912 crop, per lb	5 @ 6 c
Apricots, 1913	10 @12 c
Figs: White, 1913	3 @ 3½c
Black, 1913	2½@ 3 c
Calimyrna, 1913	4½c
Prunes, 4-size basis, 1912	3 @ 3¾c
do 1913	4 @ 4½c
Peaches, 1912	3½@ 4½c
do 1913	4½c
Pears, 1913	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912	3 c
do 1913	3½c
Thompson's Seedless, 1912	4½c
do 1913	4 c
Seedless Sultanas, 1912	3½c
do 1913	3 c

Citrus Fruits.

While the demand for oranges and lemons has been less for the past week, yet the price has continued about as it was on good fruit. On frosted or decayed lots the market has been very low. Shipments have been quite heavy, but from now on will be less and less to the end of the season. Best valencia oranges are selling for about $5 per box f.o.b., while lemons are bringing upward of $8, delivered. This price is not on the fruit auctions, but with the trade through the Central States. At New York on Monday, July 14, the fruit auction paid as high as $6.70 for valencias, and from that price down to $1.35 per box. Other auction points showed better average prices than New York, but none were over the high mark. Lemons also were high priced, bringing from $6.05 to $6.85 per box.

Total shipments from southern California for the season to July 13, were, oranges 12,052 cars and lemons 1811 cars. Last season to same date the shipments were 26,433 cars of oranges and 4546 cars of lemons.

Mexican limes are again in the San Francisco market, but are in limited supply and bring high prices. Lemons are firmly held at the old prices, and oranges are moving fairly well as last quoted.

Oranges, per box—	
Valencia	$4.50@ 5.50
Grapefruit, seedless	2.50@ 5.00
Lemons: Fancy	7.00@ 9.00
Lemonettes	6.00@ 7.00
Limes	11.00@12.50

Nuts, Honey, Hops, Etc.

NUTS.

The market for new nuts has not yet opened, and meanwhile business is quiet and prices largely nominal, with very little stock offered.

Almonds—	
Nonpareils	17½c
I X L	16½c
Drakes	12½c
Languedoc	11½c
Hardshells	8 c
Walnuts, 1912 crop—	
Softshell No. 1	16 @16½c
Ne Plus Ultra	15½c
Hardshell No. 1	15 @15½c
No. 2	10½c
Budded	17 c

HONEY.

The top grades still find an active local demand, with only moderate offerings either here or in producing districts, and prices are well maintained. Ordinary stock moves very slowly, but values stand about as before.

Comb, white, new	15 @17 c
Amber	11 @12 c
Dark	9 @10 c
Extracted, white	8 @10 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

There is no demand of special importance, but all supplies are firmly held, and no large supplies are arriving.

Light	30 @31 c
Dark	26 @28 c

HOPS.

There has been considerable business of late, on both old and new crop. Production is now expected to be somewhat below earlier estimates, and buyers are taking more interest, higher prices having been paid for both old and 1913 crops.

1912 crop	15 @20 c
1913 contracts	15 @17½c

Live Stock.

The live stock market shows little change, young calves and lambs being fairly firm at the recent advance, with limited supplies.

Grass-fed Cattle—	
Steers: No. 1	6¾@ 7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	5¾@ 6 c
No. 2	5¼@ 5½c
Bulls and Stags	2½@ 4½c
Calves: Light	6¾@ 7 c
Medium	6¼@ 6½c
Heavy	5 @ 5½c
Hogs: Grain-fed, heavy	7¼@ 7½c
150 to 250 lbs	7½@ 7¾c
100 to 150 lbs	7¼@ 7½c
Prime Wethers	4½@ 4¾c
Ewes	3¼@ 3½c
Lambs: Suckling	5½@ 6 c
Sheep Skins—	
Long Wools	70c@$1.00
Medium Wool, 6 to 9 mos.	45@ 75c
Short Wool, 3 to 6 mos.	35@ 50c
Lambs	30@ 65c

DRESSED MEATS.

Steers	12 @12¼c
Heifers	11 @11½c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	10½@11 c
Ewes	9 @ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	12½c

WOOL.

The movement of California wool is still slow, though some has been shipped and there is a little business going on. Prices are quoted about as before, but buyers are still holding back.

Spring clip:	
Southern mountain, free	8 @11 c
Northern, year's staple	13 @14 c
Humboldt, year's staple	18 @19 c
do short	13 @14 c

HIDES.

Prices remain as for some time past. There is no great demand, but further weakening is prevented by the fact that there are very few country hides to be had.

Heavy Steers, over 56 lbs.	14 c
Medium	13 c
Light Steers, under 48 lbs.	12 @13 c
Heavy Cows, over 50 lbs.	12 @13 c
Light Cows, 30 to 50 lbs.	13½c
Kip	14 @15½c
Veal	17 @18½c
Calf	17 @18½c
Dry—	
Dry Hides	24 @25 c
Dry Kip, 10 to 15	24 @25 c
Dry Veal, 5 to 10	29 c
Dry Calf, 7 down	29 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25@ 50c
Dry	75c@ 2.00

HORSES.

The local horse market is in rather depressed condition, and prices are largely nominal. No large lots are being brought in at the moment, as conditions are not favorable for the sale of country stock, and little activity is expected for the next two months. About the only demand here is for good sound horses that can be put to work immediately, and the call for them is limited.

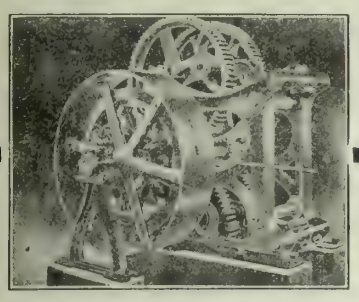
Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

At the Portland Union Stock Yards last week receipts of cattle were 1,026 head; calves, 232; hogs, 2,125; sheep, 4,171. The market was steady to stronger. Prime steers sold for $8.50, while the average sales were around $8.15; calves, $9 down to $5.75; heifers, $7.75 to $6.75; hogs, $9.25 to $9.10; lambs, $6.75; wethers, $4.50, and ewes, $4.25.

J. C. Mitchell of Hamilton City, a cattle buyer, shipped from Durham last week seven carloads of steers aged between 4 and 5 years and which brought $107 per head. There were 150 steers in the consignment. The total selling price of the cattle was $16,050.



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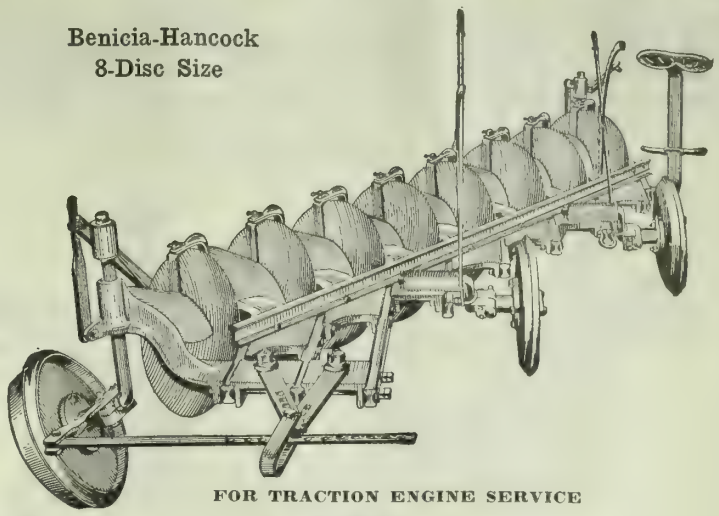

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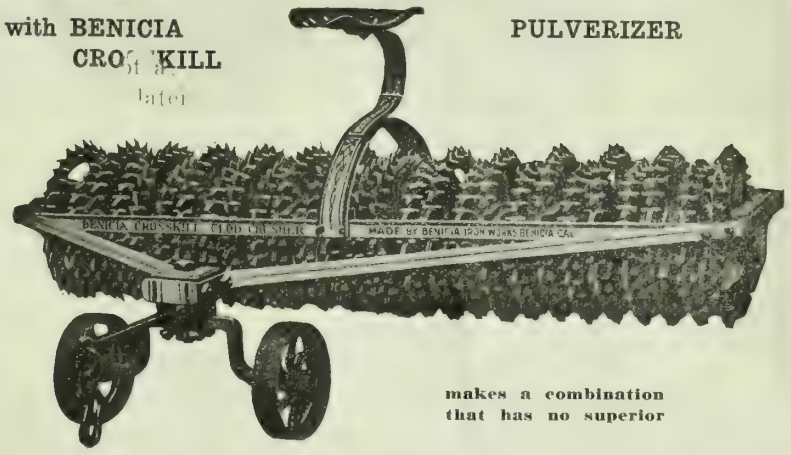

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Established in 1876. References: The Anglo & London Paris National Bank and Central National Bank of Oakland.

NEW MEDICINE IN NATURE.

A new way of treating many diseases has been recently developed in medicine. According to the layman's method of expression, it can be said to consist in making a disease cure itself, to take some of the disease, prepare a vaccine from it and then inject that vaccine into the person that it came from. Possibly they run this, like all discoveries, into the ground, but anyway claim to have achieved great results and now bring forward the following illustration of a dog caring for a wound to show that the method is followed in nature, and when nature does a thing it generally is not far from right.

What interest seemingly commonplace facts assume in the light of new knowledge. Whoever gave much thought to a dog sucking a wound? Beyond dressing and bandaging the injury, we paid little attention to such cases.

But now comes along the expert in bacterial therapy with a most plausible and interesting theory to prove the wisdom of sucking a wound. To the contention that injured surfaces should be disinfected and protected against germs he offers no objection. Asepsis, he admits, is ideal and should be employed wherever possible. But Nature, he tells us, has made provision for dumb animals that have no such safeguard, in what is known as "auto-sepsis." The dog licking his wound is a good example of this self-sepsis. The soft, velvety tongue cleans the injured area, and, more than that, by this very act the animal gives himself a dose of vaccine. If a dog should sustain a punctured wound, and infection should set in he would not be able to get the discharge in his mouth till it came to the surface. Then, when he licked it, it would go on to healing, for then he would get in his mouth all of the toxic substances developed during the course of infection, against which the tissues react in a curative manner. The animal would get the endotoxins of the bacteria in the mouth early, thereby raising the power of his blood serum and increasing the activity of the leucocytes.

Thus it is seen that while domestic animals should not be allowed to disturb the antiseptic bandage on a wound, those that run wild and have no such protection against sepsis find in their tongues a valuable means of curing the injury. For in the act of licking their wounds, animals give themselves a rational bacterial treatment.

"Henry, it says here that Mr. Jackson pelted the pill for three sacks. What does it mean?"

"Good heavens, Mary, can't you understand plain English? It means that he slugged the sphere safe and landed on the third pillow."

Mother—You disobedient boy! I've a mind to whip you.

Willie—Well, ma, there's nothing so easy to change as a woman's mind, you know.

Are You Short of Water?

The Keystone Driller

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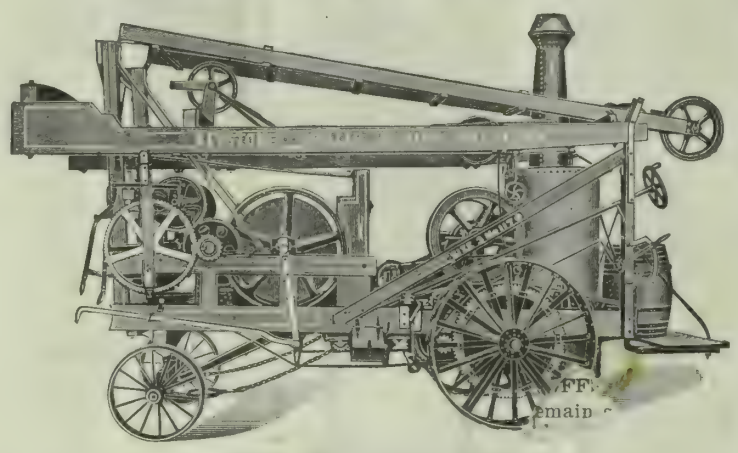

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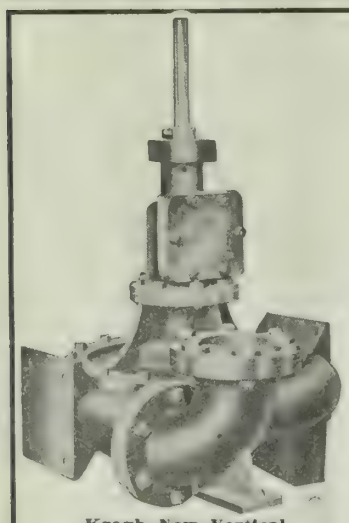

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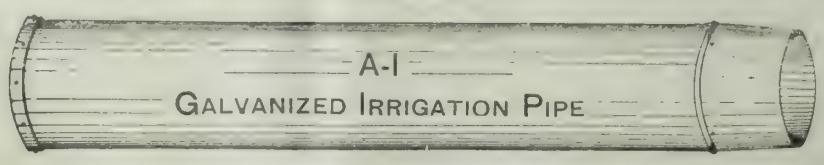

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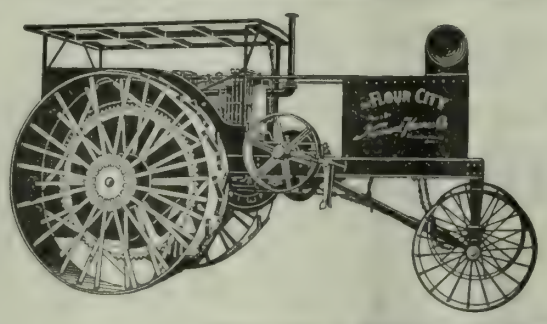

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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 4. SAN FRANCISCO, SATURDAY, JULY 26, 1913. Forty-Third Year.

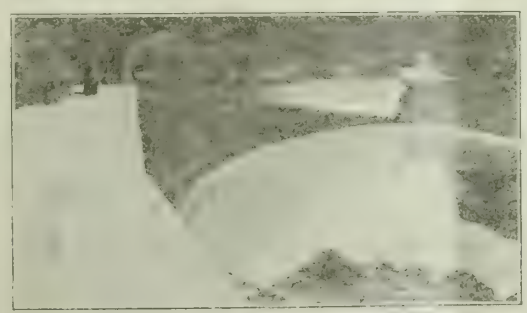
Our Newest Irrigation Project.

[BY THE ASSOCIATE EDITOR.]

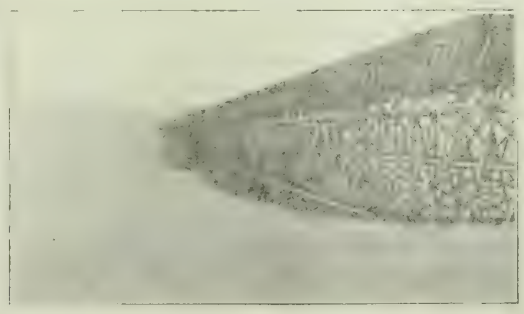
The greatest thing in rural California today, beyond all question, is the better utilization of water supplies. Pumps are going in everywhere, and the water in our streams that to a very large extent has run unhindered to the ocean is being impounded and brought to lands that are thereby made immeasurably more valuable and productive.

There are two great irrigation projects just on the verge of completion, with, in fact, certain portions of the systems already in use and the remainder almost ready to be. These are the Oakdale and South San Joaquin Irrigation Districts, separate, though in part one. They have the same diverting dam on the Stanislaus river, and part of the Oakdale district shares the same main canal with the South San Joaquin. The lands also are adjoining in spots and close together in others, so what is said of one can be said in part of the other. Nevertheless, to tell of both at one time would be too great, and it is of the South San Joaquin district to which this especially relates.

Goodwin Dam on the Stanislaus River.



Near View of Dam



Flume on Main Channel.

No Records Broken.—One very striking fact about this, for California, is that it breaks no records; or if it does, no one talks about it. It has nothing the largest on record, nor the smallest, nor the cheapest, nor the most expensive. When it comes to sheer excellence all along the line, however, it sets an admirable pattern for future irrigation districts to follow, and that is beter than a dozen records. It is fine all the way through and though the expense per acre is far in advance of many sister districts, the decision to spend the money was a good one, and the money seems to have been very well spent and to be in line to return far larger profits than small expenditures could give. For besides having very excellently designed and well executed works, the system is said by engineers to be perhaps equaled in general design and plans by one or two other irrigation systems in California, but to be surpassed by none.

That is, the engineering was done so perfectly that there is the correct relation all the way through between all the works: the canals are made large enough to carry all the water that the land will need, but have not been made wastefully large; the water can be distributed evenly and quickly without waste or difficulty. Furthermore, design and work have been done with the idea of durability and ease of operation. That is, there should be no breaks to cause expense or loss of water, and the water should be given to all the land for all the season. Both upkeep and operation will be very small.

Furthermore, while many irrigation districts go only into the business of diverting and distributing water, in the South San Joaquin district there is being arranged, in addition to this, both storage and drainage, the former of which surely is profitable where the stream flow is not abundant all summer long, the latter of which is necessary sooner or later, in practically all districts, to save some of the finest land under the ditches.

Still another thing that is very admirable and the cause of some of the extra expense over districts that attempt to operate with the smallest outlay possible, is the fact that the water is to be distributed to every forty acres in the district. By that means the individual rancher can deal directly with the district in getting his water. He will not have to negotiate in company with his neighbors for a right-of-way to a lateral perhaps a mile distant, nor help to operate with his neighbors a small, informal ditch company to look after the distribution of that water after it leaves the control of the district. The district will put the water into each individual's ditch, except in very small acreages.

History.—The water comes from the Stanislaus river at a point where the placer mining of early days was at its height. But those days have long passed, and the old mines have nearly all closed; placer mining is no more, and the waters of the Stanislaus have long flowed unchecked to the San Joaquin, thence to the bay and the ocean.

In the nineties an attempt was made to divert water for irrigation, but the project was too great for the men behind it, and, facing bankruptcy, they were compelled to sell out. The purchaser likewise was unable to make a go of it, as the water rights were given for too little and the annual charges were less than operating expenses. The result was that the water users could not get satisfactory service and the ditch company threw good money after bad the deeper it went. The co-operation of all the land-owners in the territory that could be sup-

(*Continued on Page 77.*)

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W. H. SCHRADER - - - - Adv. Manager
D. J. WHITNEY - - - - Associate Editor

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., July 22, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.01	.15	.11	66	50
Red Bluff	.00	.00	.00	102	64
Sacramento	.00	.00	.00	98	56
San Francisco	.06	.06	.01	68	50
San Jose	.08	.08	.00	88	50
Fresno	.32	.32	.00	102	62
Independence	1.36	1.42	.00	94	54
San Luis Obispo	.00	T	.01	78	52
Los Angeles	.00	.00	.00	82	62
San Diego	.04	.04	.00	76	62

The Week.

The progress of California as a purebred center is again in the limelight, and the proposition to establish a Federal Quarantine station at San Francisco is obtaining recognition at Washington. The stronger that sentiment is crystallized in favor of this quarantine station, the better chances for getting it. Even the casual reader of our columns will note the wonderful list of new breeders establishing herds and flocks, or importing fine draft stallions. The best breeders always are adding new blood, which will come from across the Rockies, from the Northwest, or from Europe after the Panama canal is opened. From Europe the importer can do either of two things if no station is established. He can re-ship by rail from an Atlantic port, running a nice chance of injury in the transfer and in the cars, also paying a nice fat sum for transcontinental charges, or he can have the stock shipped direct to San Francisco, but pay a lot of extra expenses necessary because there is no provision to inspect that stock or to look after it before inspection. Of the two the former is more likely. With the canal and the inspection station, the cost of bringing stock from England or the Continent to California will be cut a little more than in two (not including the initial cost, however), and neither the professional breeder nor the stockman whose cattle, sheep, hogs or horses are to be graded up by good sires can afford to permit our live stock progress to be retarded by any unnecessary trouble and expense in getting here the kind of breeding stock we should have. How much good it will do, we don't know, but here's to let Washington know how California stockmen stand.

We have received another letter from Secretary Carver, of the State Dairy Association, stating that renewed effort is to be made to get the dairy bills that were lost by pocket veto passed at the next legislature and made into laws with the Governor's approval. Inasmuch as the main fight against them, which was mostly under cover, is concerned, it was over the tuberculosis question, and after learning at the tuberculosis conference at the University what the authorities thought about the tuberculin test as it actually exists, we think there is little chance of any reasonable objection to the bills when they do come up again, nor support from authorities for anybody who does fight them. Meanwhile, things are about as they should be.

Out in the World.

[BY THE EDITOR.]

[In our last issue Professor Wickson sketched the purchasing of supplies by the co-operative societies of Italy, Hungary, and Austria for the use of farmers in those countries. Such work was shown to be always associated with rural credit banks, both large and small, and to be of great help to farmers in reducing the cost of production. This week the writer returns to the subject of farmers' banks and credit associations based upon observations of these institutions in Germany.—ASSOCIATE.]

We are glad that we did not undertake to enumerate the different kinds of credit institutions for farmers which we found in Italy, because, if we had succeeded, the schedule would have soon been found incomplete as soon as we crossed the borders of that country. The farther we go the more kinds of banks, chiefly organized for loans to farmers, we find. We have already declared that such institutions are clearly the latest European financial fashion, and, as fashions are according to taste or at enmity thereto (concerning degrees in either direction it is not fitting to dispute), there is this which is clear, namely, that all fashons cover human needs, more or less, no matter how scant or ample the creations of these fashions may be. It is not otherwise with financial fashions, which, vary they never so widely, must be intended to meet some economic need, either subjective or objective, as the case may be. The striking contrast between the old and the new in banking fashions is that, while old fashioned banks everywhere in the world are, and have always been, essentially subjective, or for the advantage to the lender, the new-fashioned banks are largely objective or for the advantage of the borrower, and their operation has demonstrated that the borrower has rights which the lender is bound to respect. In Europe this fact is forced upon the lender's attention: first, by the Government; second, by the nobility, which is and has always been a borrowing class; third, by the forceful co-operation of the farming population, which is learning the benefits of saving and of borrowing and is fairly reveling in its financial power thus engendered.

The realization of this condition has created banks or repositories or agencies, which have names beyond enumeration and minor methods characteristic of the districts, states, or nations in which they have been developed. Manifestly, it would require a treatise and an expert to analyze and classify all these variants in methods and nomenclature. The important thing seems to be that, though methods and titles are many, the principles and ruling conditions are few, and understanding of them is really the illuminating thing.

Made in Germany.

One of the first facts to understand is that the demonstration of principles and of the feasibility of many of the prevailing methods of co-operation was made in Germany. This does not mean in the German Empire as such, because some of these rural banks and credit societies were in operation before the present Empire was established. In fact, the need for them appeared and their development began in the different states which afterward formed the Empire. Imperial policy has been to multiply and strengthen them and to constitute them, so far as possible, a factor in the government, because they promoted prosperity, increased production, advanced the quality of citizenship, and uncovered sources of imperial income far beyond imperial loans and concessions made to promote them. It appears clear that all governments, imperial, national, and municipal, which favor co-operation, do it without losing their presence of mind—they do in fact get their money back at a usurious speed beside which the pace of the old line of loan sharks, which they were designed to displace, looks like a procession of snails. However, es macht nichts (we find no American equivalent), because whatever is gained by the Government from the people is for the good of the people, and if the people do not like it—es macht nichts, some more. In this case this does not wholly apply, for agricultural credit provided by the Government is intrinsically good for the people—which is a matter for American statesmen to consider. It must, however, be distinctly understood that most credit societies, both small and great, do not depend upon Government subsidy or favor, and some of them take pride in their independence. They do, however, take advantage of laws passed to make their progress easier and the surety of soundness, as vouched for by inspection by the Government officials, gives them better standing as financial factors.

It may be claimed that practically all these things were made in Germany, for though savings banks were established by governments, and though individuals and societies were subsidized by them to make great collections by the deposit process, the present development of such institutions and their present methods of operation embody German policies and inventions, and debt to Germany in rural finance is freely acknowledged everywhere.

Various Kinds of Credit.

As has been suggested in the accounts we have given of individual banks and societies, all the various forms of credit which can be helpful to farmers and likely to make their food production larger and more profitable to them, and to their governments and patrons, are provided for in European countries. It also seems clear that loans to farmers of small, medium, and large acreage, and for uses of all these dimensions also, are provided for at lower rates of interest than could be had when such money had to be secured from private money-lenders—of all sizes and dimensions also.

Short-term loans such as we generally cover by promissory notes to bankers or to individual money lenders, are here furnished by associations of borrowers of the same class gathering most of the money from depositors of the same class and knowing each other so well by personal contact that there is engendered a mutual confidence which induces them to assume unlimited liability and to pledge all their earthly goods and moral support to each other. When they do this there is a collective security established which all financial institutions from governments to savings banks accept as unimpeachable, and money is available to farmers who need it in quantities increasing from year to year almost incredibly. This is surely the gift of Germany to modern finance and, like the quality of mercy, it is twice blest: it blesses the giver to such an extent that the rural prosperity of Germany is marvellous, and it blesses the receiver, for the

rural people of all countries which have introduced German methods of saving and lending are 'l assuming new national strength and prosperity. Whether in any part of the United States we can secure German results in German ways is very doubtful indeed, but there is certainly a spirit in them and an attitude toward farming borrowers which can be assumed by our state and national governments, by our capitalists and by those who handle their money, which will be of untold advantage to our farmers and to those who are directly dependent upon their successful work as consumers are for their daily bread. How to bring all this to pass is one of the greatest problems now facing American statesmen. Currency and banking reforms which are now made so much of by politicians are only schemes for chasing evil from place to place. What is needed is a cure for the evil. It may be necessary now for bankers and their best friends, the dealers, to chase the devil around the stump by piling up clubs at proper intervals, but it should not be necessary. If every farmer of probity and property can get money as he needs it for sowing and for harvesting as the European co-operating farmers get it, that great financial bug-a-boo, "money to move the crops," can no longer be the stalking horse for capitalists and speculators. Short-term loans and "open accounts" will make every responsible farmer the master of his own difficulties, because they will give him money without usury and enable him to pay fair interest for money he needs while he is actually using it, and free him from discounts and compounding exorbitant interest rates. How to get this is the problem in America. They have it in Europe.

Long-term credits on land for improvements and increased production constitute, of course, an entirely different matter, and they are provided for in Europe by a different set of banks, credit associations, etc., and are favored by governments in a different way. The different countries outside of Germany have methods which vary somewhat, and the different states of the German Empire have methods which are in some respects their own. They all involve, however, these essential principles:

First—Loans to agriculture generally at lower rates than to manufacturing and commerce, because agriculture has the greater security and achieves the greater public benefits.

Second—Loans on land without limit to the length of the term through mortgages, which never fall due so long as the interest is paid, coupled with other arrangements so that a failure to pay interest because of loss of crops, etc., does not bring calamity to the borrower. Foreclosure, in our sense of the word, is unknown.

Third—The principle of "amortisation," through which the payment of a loan on mortgage is accomplished by devoting a small part of the interest payment to killing the principal. "Death to the debt" is what the word "amortisation" means. We call it part of the interest because it seems so small. For instance, the interest may be 4%; by paying 4½ or 4¾%, the killing is done in, say, 50 years so the borrower never has to worry about his mortgage falling due. He can go on farming and financiering with his profits, using the capital he had to borrow to start his business, just as states or municipalities or corporations use capital, with a sinking fund to kill the obligation so slowly and surely that the debtor kills his mortgage without striking a blow. Amortisation brings death to the debt and not to the debtor. A whole page could be written about it. We have to ask the reader to think it over for himself.

Fourth—The principle of issuing bonds based upon amortisating mortgages just mentioned. In some cases specific bonds are issued to the amount of individual mortgages, which the mortgagor sells, and then the mortgage bank is merely the actuary of the job. The greater scheme, and the more widely prevailing, is the one in which the bonds of the great credit society have no specific relation to individual mortgages, but are bonds of the society secured by the collective value of all the mortgages it holds. Such bonds are issued by government authorization. For instance, there is apparently a demand for money for farm improvements of all kinds, or for farm development. On the basis of applications from intending borrowers the bank applies to the government for permission to issue, say, bonds of a total value of $250,000. The government looks into the conditions and grants or denies the request. If granted, the bank notifies the intending borrowers to come through with their mortgages and take the money. The papers are prepared at minimum cost by the bank's law branch. The borrower is relieved of high law fees as he is of high bank fees. The quality of the land and the title are determined by bank and government experts and the title is established beyond reach of controversy. Even the courts are closed against any attack on the title forever. The bonds issue and they become the surest thing on earth. The government itself in some cases puts millions into the business. The bonds become authorized investments for all kinds of trust funds: they often have a standing higher than bonds which the government may issue on its own account, because no interior political fermentation and no danger of invasion by a foreign power can depress their value. They rest upon a conservative valuation of good farming land which no known agency can impeach. They are, of course, wholly removed from any boom or speculative standards. Thus, these bonds become permanent in time and real value, and are sought for by those who desire sure rather than highly profitable investments. They bring money out of stockings, out of holes in the ground, out from under the bricks in the chimney corner. They develop a vast aggregate of money which common investments and common financial institutions cannot draw from its hiding places. They are not in opposition to common dealings in money. On the other hand, they stimulate old styles of banking, both as a useful means of making investments available when needed, and in opening new lines of brokerage. They simply make dead money alive for all who are interested in keeping money moving, as well as for those who desire to make dead money securely productive. But this cannot be done without the contribution which the government makes by the passage of favoring laws and by the guarantees which its participation carries. This essential requirement is the matter to which the Congress of the United States and the Legislatures of the several States must address themselves. Meantime, it is for the people to think about.

We are quite sure that we have not included all the unique principles which European farming credit experience has demonstrated. We are not sure that we have even caught the best of them—for writing as we run, it is quite possible that an owl on a fence post may seem larger than an eagle on a mountain top. Therefore, these notes are held subject to revision.

The Joys of Bankers.

Possibly some one in the banking line may chance to read our reflections and may get the idea that we are disrespectful to bankers and inappreciative of their services in making the world go round. We hasten to declare that our European observations have taught us greater admiration for bankers. Of course, we have clearly seen that they have no monopoly of financiering wisdom, nor of the money and credit it is done with. We have seen that the simplest people can master hoards of money if they undertake to do it, and can create colossal credit by co-operative or collective action. They can, in fact, do things which bankers have never succeeded in doing. But their work does not make professional banking less necessary nor less profitable. It takes the narrowness and Shylockism out of banking, but banking is all the better and greater for it. So far as we could see, the more banking people do for themselves, the more chance there is for professional banking. The people get the banking habit, and that keeps all kinds of bankers busy.

We have gone around the commercial banks of some European cities in districts where co-operative banking was brisk, and have seen how complacent the old spiders sat while the flies were loading themselves with credit molasses which made them all the sweeter. We have admired the palaces which they erected for their banking and which are so well equipped for social as well as financial activity. When the European bank manager receives a call from a client whom he esteems or desires to conciliate, all he has to do is to press a button and a waiter will bring in a bottle of champagne, which he will drink with a gentleman, or a bunch of roses, which he will hand to a lady—kissing in devotion the hand which she extends to receive it. Oh, these European bankers are interesting; the way they handle their business makes American bankers look like a bunch of stevesdores. When we expressed an interest in the social annexes of their bank buildings, their gilded banquet halls, cool wine cellars, white-capped chefs du cuisine and gorgeously liveried butlers, all important factors in their banking business, they smiled and said: "You Americans are deadly dull. We believe in enjoying the delights of living while doing business." They frankly admit that they enjoy the banking progress of the masses, and they figure that just as fast as the leaders of rural finance are evolved into prominence they will duck them in a pond of champagne, and lay them out to dry on beds of roses. Let no one think for a moment that the European higher-ups are losing their presence of mind.

How One German Bank Works.

But we are indulging too freely in glittering generalities; let us drop to a concrete instance. In a very prosperous rural region in Germany we found a banking institution developing agricultural credit in this way, as described by an officer of the bank:

The main purpose and for which the bank was originally organized is the furtherance of agriculture and granting credit on country property, although it takes also mortgages on city property and extends credit to communities. But of the outstanding 12,000 loans, amounting to about $18,000,000, 8000 in amount of $9,000,000 have been placed for the benefit and extension of the country's farming interest.

The bank was founded in the year 1883. Its administration is vested in hands of a board of government officials under supervision of the ministry of the Duchy of Oldenburg.

The Duchy of Oldenburg has an area of 2078 square miles and according to the census of 1907 a population of 360,335, of which 144,715 follow the rural occupation. To this latter part of the country's interest the bank gives its best atten-

tion and assistance. We do not loan money to the farmer for his daily needs, to be paid back as he can gather his crop. This is done by the rural saving and loan associations. But this bank loans money in not too small amounts to farmers for the purpose of buying land, to pay off old debts, in case of inheritance to satisfy other heirs, to improve old buildings or erect new ones, etc. These loans the farmer has to pay off in instalments and the rules of the bank are as follows: For the first year the debtor has to pay the annual interest on the capital and a small amount besides for amortisation. At the present time, where money is scarce, the rate of interest is 4½% and the first instalment 1% or together 5½%, being annually $137.50 on a $2500 loan. This amount the farmer has to pay until the whole debt has been extinguished, which in accordance with the compound interest table will take 39 years. In the meantime and as long as the debtor promptly fulfils his obligations, the bank cannot recall the loan.

The bank can bind itself in this way, because it can secure money from the whole empire on its mortgage bonds, the life of which is permanent and which are considered a very safe investment and well sought after as they are guaranteed by the government with the whole wealth of the population behind them.

The amount of loans which the bank grants on a single piece of property is limited to 50% of the value, land and buildings together. The value is appraised under oath by prominent and competent persons, each piece of land as well as each building singly, with all possible explanation as to their findings. Also, the annual rent has to be stated. This document has to be testified to by the head of the community as well as the government's official for the respective district. These two latter persons have also to testify as to the applicant's ability as a farmer and his reliability in meeting his debts. The amount thus granted is recorded upon the property as a first mortgage; should there be a prior indebtedness the loan is reduced by that amount. Owing to these precautions the bank has so far suffered no loss whatever.

This bank also makes loans upon still more favorable terms to new settlers on government lands and to farm laborers to build cottages in the villages, as we hope to find space to discuss at some future time.

About Hay Prices.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

We have been repeatedly asked by hay growers what the prospects were in this or that locality and after traveling over most of the Sacramento and San Joaquin valleys, also Napa, Marin, Sonoma, Santa Clara, Santa Cruz, San Benito and Monterey counties we have found the following conditions.

In the Sacramento valley a great deal of grain has been cut for hay due to the expected high prices of hay over ordinary grain prices. Added to this is a large increase in the alfalfa acreage, part of which will be consumed by dairy cattle brought from alfalfa districts further south.

As most of the Sacramento valley has both a good crop of grain and alfalfa hay we should say that that district will have more hay to sell this year than perhaps ever before.

The coast counties north of the bay not only have good hay crops, but are also furnishing a great deal of stock with pasture and grazing land. Although the hay crop of these counties may not affect the State's markets materially, with alfalfa at its high level it will not be shipped in as it has been in the past.

The counties south of San Francisco may be said to be in a bad condition for hay as the crops were almost a total failure except where under irrigation. We have noticed that this section has often been used as a criterion of what a shortage there is all over the State. While it is true that conditions are about as bad as they could be, one point seemingly overlooked is that large shipments both of range cattle and dairy cattle have been sent out of that district. The range cattle have gone to various points, a great many being shipped to Mendocino and Humboldt counties and some to Nevada and northeastern California points, also to Imperial valley. While at Hollister we were informed that buyers from Oregon and Washington had purchased all of the surplus dairy cattle available.

The section from Sacramento to Bakersfield did not produce anywhere near a normal crop of grain hay, and in fact, many localities report a total failure, but as most of that section is usually cut for grain perhaps no large hay shortage will be noticed. The irrigated districts of that section vary a great deal as to their yield of alfalfa. In the Modesto and Turlock irrigation districts we were told that early in July the prospects for a large alfalfa yield were very bright. In fact several growers stated that prospects were better than last year. With the increased acreage these two districts should produce more alfalfa than ever before.

From these sections south to Tulare county, however, there will probably be a good deal smaller crop than usual, due to a shortage of irrigation water from the mountains. But this may be overcome somewhat by the large number of pumping plants that have been installed during the past two years.

Imperial county, in the southern part of the State, is not only taking care of herself nicely, but is also caring for a large amount of stock shipped there from coast counties and as that is the largest stock district in Southern California we should judge conditions there are about normal.

Taken as a whole the State may be said to be short on hay, but one point often overlooked is the fact that a great deal of stock has been sold.

As we have stated the range cattle have been cut down in numbers by most cattlemen to where the balance can be safely carried over even on the poor range available, so that perhaps no large amount of hay will be necessary for that end.

In the larger dairying sections such as Tulare, Kings and Stanislaus counties, a great deal of stock has been disposed of and as much of this stock has been sent away from the State it will also greatly affect the consumption of hay this year.

One thing in favor of higher prices, however, is the fact that the sections which ordinarily cut lots of hay are a long ways short this year. The main reason why this should affect the market is that these sections have as a rule large warehouses in which the hay may be stored until the winter months when the market is at its high level.

As the sections which had the best crops this year do not as a rule ship enough hay to warrant building warehouses, the question arises what will be done with hay from such sections? The truth is that it is already beginning to be shipped, and that it is the cause of the present slump in the market. One large hay grower told us last week that although hay was comparatively easy now and would be perhaps well into the fall months, he considers those who are able to store their crop until winter will be well repaid for it.

LIME FOR HEAVY CLAY SOIL.

To the Editor: Will you kindly advise me the method for determining the amount of carbonate of lime required to make friable a heavy clay soil?—J. B. C., San Francisco.

There is no definite way to determine the amount of carbonate of lime required for a soil, although a person experienced in its use could tell by looking over and examining a soil approximately the amount that would be best. Furthermore a moderate application would give as good results as could be desired for a certain length of time, while a larger application would keep the soil in good condition for so much longer that it might be profitable to use the greater amount. A ton to the acre is a good amount to try, though perhaps half a ton would do and perhaps for a very refractory soil two tons would be the best amount. In proportion to the results secured a person need not be afraid of spending too much money on this fertilizer or soil corrective.

CHEAPER POWER FOR PUMPING.

To the Editor: The article in the PACIFIC RURAL PRESS of April 19, entitled "Electric and Distillate Equivalents" was well answered by Mr. F. W. Kerns, and was probably read by farmers in all sections who are endeavoring to procure cheaper water. But how about kerosene, alcohol and other combustible compounds from which power can be derived? Will you not discuss other cheap methods of pumping, for what farmer is not interested in water and lots of it, and the dry season is already in sight?

Your Query Department has always been the most interesting to me, for the problems confronting one farmer, have been or are being thrashed out or worked over in other communities.—E. B. D. B., Kelseyville.

ANSWER BY C. R. SESSIONS, San Francisco.

The future will surely have many methods for getting cheaper water. There are kerosene engines today for which a cheaper fuel cost is claimed, and this claim is no doubt true. In theory, the alcohol engine is very economical in fuel consumption; and because alcohol is a fuel that can be gotten from vegetable matter and because gasoline, distillate, etc., may become so high in price, or so scarce that they can no longer be used, alcohol may become the fuel of the future.

The Humphrey Gas Pump, a new pump which has been invented and developed in England, is worked by the direct pressure of exploded gas upon the water pumped, and is probably, from a consideration of fuel consumption, the most economical pump there is.

The fuel cost is not the only cost. The first cost of the Humphrey pump and of the alcohol engine probably exclude these pumps from the agricultural field for the present. They are in the nature of experiments and if it is not good engineering, it is surely poor business for a man who has plenty to do with his own affairs to experiment with someone else's new machine. He had better devote his time and energies to his own business and use machinery of approved design that is giving satisfaction in his locality.

FERN ERADICATION.

To the Editor: I have a young orchard, about ten acres of which are thickly covered with "brakes" or large ferns. The orchard is on rolling land and the soil light in structure. I would deem it a favor if you would inform me at your earliest convenience as to what is the most efficient and economical method of getting rid of them.—O. P. F., Placerville.

Ferns on cleared land are very difficult to clean out for quite a time as they keep on coming up from the root stocks in the soil. They will keep on doing so until the plant food stored up in the roots is exhausted. Until they branch out and begin to draw plant food and moisture from the soil they will not do much harm, as the first growth, that which comes before the top unrolls, is drawn from reserve root strength more than from the soil particles. If you run a weed cutter along beneath the surface before the "brakes" have made much headway you will sooner or later kill them. Even under ordinary cultivation they generally die off in a few seasons on account of the air and sunlight striking the soil and cannot be considered a very bad pest or problem, although it will be advisable, as stated, to cut them off whenever they make too great a showing.

In a query last week a subscriber asked where the "Manual of Practical Farming" could be obtained, and through an oversight this part of the query was overlooked. The book can be obtained from MacMillan & Co., New York, price 50 cents.

Humus Building.

To the Editor: In the issue of July 5th you kindly answered my enquiry with regard to a test for humus. If you will please give a little information about the color of the ammonia water I think my knowledge of chemistry may help me to make the test and come to some conclusion with regard to the amount of humus in my soil.

The articles in the PRESS by the Associate Editor on the soil and its needs have interested me very much. I have owned my grove going on two years. I raised and plowed under a vetch crop this year—as near as I can find out, nothing else in the way of furnishing material for humus had been done since 1906 or 1907.

At that time barnyard manure was applied—I would like to apply barnyard manure again, but it is hard to get, and expensive. From the associate editor's articles I should judge that he considers barnyard manure more valuable for humus than straw; am I right?—D. M. E., Rialto.

Would hardly advise you to try the ammonia test for humus in the soil. It is seldom used and would require comparison with large numbers of other soils in order to base anything like accurate judgment upon. Similar practice might better be taken in observing the conduct of different soils in field conditions, as knowledge of good soils from the way they act is 100 per cent better than any laboratory analysis of them. You likewise would need various equipment that would cost quite a bit and for which you would have little use. You can, however, get the method by writing to the soil department University of California, asking definitely for Prof. Hilgard's short test for humus. If you send some soil to the University, the soil department will tell you what they think of its humus content, though they cannot analyze it for you.

The reasons for prefering barnyard manure to straw are manifold and we would have discussed the subject before this in a special article, but was unable to do so through press of work.

Briefly, some reasons are these. Straw contains only a moderate amount of either plant food or animal food, as the plant sends nearly all of its strength into the grain. This leaves in the straw only woody fibre and not a great deal else.

Most manure on the other hand is the residue from the finest part of the plant. From California farms alfalfa is very rich in nitrogen and the other plant foods and the manure therefore is rich, too, richer than if only grain hay were fed. City horses likewise are fed so largely on grain that the manure is richer than that of most farm horses, therefore stable manure in California is quite sure to be rich wherever it is found.

There is one very important feature about stable manure that is frequently ignored, especially when a statment is made that this or that contains so much potash, so much phosphorus, so much nitrogen, and so on. It contains plant food in accordance with that in the feed of the animal or fowl from which it came. Manure from stock fed largely on straw naturally contains small amounts of plant food, for the animals take largely from the foods there at the start and very naturally cannot put any real plant food in. That is one reason why ordinary barnyard manure is a very much better plant food than straw.

Perhaps even more important than this is the nature of the material itself. Plowing straw into a soil may be disastrous, as it is so woody and dry that only with difficulty will it decay properly. Its effect is mostly to dry out the top soil. If you have a heavy soil that lies so tight and moist that the straw will decay before summer, straw may be good as a fertilizer, but ordinarily straw or any dry, woody substance is pretty poor stuff to plow under.

There is one good reason why manure from straw might be much better fertilizer than the straw itself. The cow or horse chews it all up and gets it into fine particles that will not dry out the soil, but rather work all through it and do everything that manure should. The plant food therein will also be so exposed by the crushing of the cells of the straw that all can be put into contact with soil particles and operate freely, whereas in the original straw it would be so locked up by the woody fibre that soil moisture could do practically nothing with it.

Then in addition to the mere grinding into small particles there is the excellent effect of the digestive juices, which work on even the crude fibre so that it becomes more tender and susceptible to action by roots and soil. This action of digestive juices can hardly be too highly thought of, and without doubt is one reason why manure is such a fine fertilizer. Therefore, ordinary barnyard manure is a very much better fertilizer than straw, and the straw itself is vastly improved, it is hard to say how much more valuable it becomes, by being used first as stock feed of some kind. Turn a band of sheep, or what not, on a stubble field, and you have first the value of the straw for feed, and finally a greatly improved fertilizer.

Humus Building Slow.—Before closing this little discussion there is one thing well worth calling attention to and that is the very slow process of building up humus in a soil. To hear most people talk of supplying humus to a soil you would think that great things were being done by growing a few cover crops and plowing them under. Half a thought will show that putting humus in the soil is slow work.

A California soil not too well supplied with humus, rather scant in fact, may have half a per cent of humus. Double the amount would be small enough. That means, since there are approximately 2,000,000 pounds in the first six inches of average soil, or 1,000 tons, that there are 10 tons of humus in every per cent, or 5 tons with half a per cent. Humus is former vegetable (or animal) material that has had a long period of working in the soil and a ton of dry matter would be a whole lot less than a ton by the time it was fully changed into humus. Therefore, it would require a fearfully large amount of manure or cover crop to make this amount of humus, and during the period of formation there would be the natural destruction of humus, which occurs through the action of heat, sunlight and various agencies. Still, it is wonderful what a little barnyard manure or a cover crop will do.

The best guide in all cases is not the account book to find out how much cover crop has been grown or how much manure should be put on, nor is it the chemical analysis showing the amount of humus in the soil. It is rather the action of the soil itself. If that is satisfactory, grow cover crops when possible, put on what stable manure is available, and the other fertilizer, and let it go at that without worry or unnecessary expense. People get too excited over the theory of the case sometimes to give actual appearance and results the proper consideration.

OUR NEWEST IRRIGATION PROJECT.

(*Continued From Page 73.*)

plied with water was needed, so the South San Joaquin and the Oakdale districts were organized. The former includes 71,000 acres, the latter a very little less. As compared with this, the old ditch supplied, after a fashion, only about 4,000 acres.

The cost to the South San Joaquin district for their part of the work, including drainage, storage, main canals, and laterals, as well as their share of the diverting dam and 81% of the first three miles of the main canal, will be $53.80 per acre, in bonded indebtedness, not cash. The directors have been B. A. Goodwin, president; W. J. Woodward, J. S. Moulton, C. T. Wiggin, and G. E. Steinegal.

Features of Work.—The Goodwin diverting dam is a thing of beauty. It is far up in the Stanislaus river in Calaveras county. It is built in two arches, instead of one, as is the La Grange dam of the Modesto and Turlock systems, and was not as expensive as that, though the difficulties of getting the water from the dam to the open ground are greater than in those systems. This dam is 400 feet long and 80 feet high at one point, which is on the southern arch.

From this dam to the edge of the South San Joaquin district the water has to be brought twenty-two miles, four miles of which, however, are in natural channel. There are some great engineering features in this 22 miles. There are 7 miles of concrete ditch, 13 tunnels with a total length of two miles. One of these tunnels is 3,500 feet long, lying far below ground-level. Shafts were sunk in two or three so that work in the tunnel could go along simultaneously in several places. Much of the rock from this tunnel was so fine and hard that it was ideal for the concrete work that was needed for the seven miles of the main canal.

Now the reason for this fine work was partly that the roughness of the country made it necessary, partly that the directors and engineers decided that real economy made it necessary to get away from side-hills, off to the mesas or rolling plains. Side-hill work may for the time be cheaper than tunnels and great amounts of cutting, but it means long canals, easy breaks, and expensive and difficult repairing at a time when water is most needed for the land. The main canal is thus very direct and safe.

Whenever it has been necessary to go along a side-hill in the mountains, the canal has been concrete lined. Fills also have been avoided, and a surprisingly large amount of the canal is below ground-level. Flumes also have been dispensed with almost entirely, though there is one large wooden flume that is the only part of the system that is not expected to last for generations with nothing more than nominal repair.

Storage Methods.—No work has started on the storage of water, as this is not necessary just now and the remainder of the work will be completed first. Nevertheless, everything is ready to start when opportunity offers, and for the season of 1915 storage will be an accomplished fact and one of the greatest storage ventures in the West, though inexpensive.

The storage reservoir will be called the Woodward reservoir after W. J. Woodward, the director who saw the opportunity for it. Its site is out in the open hills far below the diverting dam and but a few miles above the district line. It is in that part of the canal referred to as natural watercourse. The water will cover several thousand acres and store up 49,000 acre-feet. The cost will be only $790,000, or less than $11 per acre, giving approximately 8 inches of water to the acre. How much more than $11 per acre 8 inches of water would be worth in a dry year is too apparent for words—the storage feature is not notable for wonderful engineering, but for simplicity and efficiency. The storage dam, by the way, can be heightened when desired to store far more than the amount of water named.

It is time to quit talking. It is necessary to say something, however, about methods of storage. The diverting canal, for instance, can take out 850 cubic feet per second, part of which goes to that part of the Oakdale district north of the Stanislaus. All this can be run into the reservoir through the winter and up to the time that full irrigation starts. Then if the water in the river falls low, as much can be taken out as there is for the share of the district and run into the reservoir, while from the lower side of the reservoir a full stream can be taken. With this storage supply, in the driest years irrigation can be continued until cool weather and fall rains make it unnecessary.

This spring the dam was formally opened and water run through a part of the main canal for the land under the old Tulloch system. Early in August, if not before, the main canal will be completed up to the district line and all of the Tulloch system in the district operated in final condition. The district laterals will not be completed, though water can be run through some of them. In the spring of 1914 the system will be complete to the last 40 acres, and in the spring of 1915 in all probability the storage dam will be ready also. Then the northern part of the San Joaquin valley will be a garden, as is the Modesto and Turlock districts now, and the visitors to our Exposition will be welcomed by as fine a vision of comfort and productivity as can be found in our borders.

The cost will be very small, $2.70 per acre per year as interest on the bonds for 20 years, after which one-tenth of the bonds are to be paid off every year. The operating expenses, due to the care in construction and design and small cost of upkeep, are expected to be only about 80 cents. In other words, for 20 years $3.50 per

acre per year, or a little over, will be the only charge for building the whole system and putting the water on the land from it, too.

The lesson of it all, is to have a good job well done. The extra expense that this district went to in getting a good line for their canal, in providing storage, in preventing trouble from poor drainage, in making it easy for the land owner to get the water on his land, is every particle repaid in the value the property owner will receive, and this district, with the Oakdale district, is a welcome and honorable addition to the California lands formerly dry and largely unproductive, but now, or soon to be, green, pleasant, and filled with the bounties that nature provides to those who will work for them.

The Distribution of Water.

The principles of irrigation have been discussed many times, but the subject is so great and so important that facts regarding it can bear repetition. One of the best summaries that can be found on certain features of irrigation, namely, the character of the water supply, the character of the soil to be irrigated and the surface conditions and slope of the land, recently appeared in the South African Agricultural Journal. It was a prize essay in a contest held by the South African Irrigation Association and applies well to California.

The body of the essay follows:

Since the falling of rain upon soils in any region has always been intermittent in character, since during the intervals of fair weather a part of the water so given to the soil is lost by evaporation or drainage, and since vegetation will thrive best only when a certain definite amount of moisture is given and retained in the soil, for use by such vegetation, it follows that proper distribution of water over given periods by artificial means becomes necessary for the most profitable means of carrying crops to maturity. This being true, there would occur times with almost all soils when they would give larger yields if they could be artificially irrigated than they would have done if the irregularity of the rainfall, the high velocity of the wind, and the rapid evaporation in a hot climate had to be contended against.

But not all soils are alike in their capacity for retaining moisture and of permitting it to draw away, and this being so under one and the same condition of rainfall one field might benefit by irrigation while another one would profit by better drainage. Taking this into consideration it would be wise, where the quantity of water for disposal is limited, to take due precaution in selecting the soil to be irrigated and by frequent and deep tillage always to conserve as much water as possible in the soil itself, for the production of crops without any undue drain on the supply for disposal.

Loose vs. Heavy Soils.

When the supply of water is limited, a soil that has a greater capacity for retaining moisture is far more suitable for the purpose of irrigation than an arid soil that would require frequent application of water in order to retain a uniform amount of moisture to bring a crop to maturity. And even where the water supply is abundant such a soil is still more profitable to cultivate than a soil that requires frequent application of water to keep uniformly damp, as it minimizes labor in irrigating and saves water for other purposes.

Loose, porous soils that require frequent application of water could, however, be more profitably used for root crops, and perhaps barley, than damp soils where drainage is imperative at certain times. The frequent application of water to root crops (and barley) on sub-soil that would drain away any superfluous water instantaneously, is far more likely to give a maximum return than where the soil is less porous and retains the water for longer periods.

Fertilizing Effects.

It may be laid down, as a general rule, that the water of highest value for the purposes of irrigation is the sewage of large cities, unless it contains too large amounts of poisonous products from factories in the form of injurious chemical compounds.

The organic matter in such sewage is of the highest value as a fertilizer for many crops, and in all warm climates it is often practicable and very desirable to use such water for irrigation.

Next in value to sewage water must be placed that of streams carrying considerable quantities of suspended solids. It is generally recognized that the richest and most enduring soils of the world are those formed from the alluvium of streams, laid down by the water on its flood plains; and when this is true, it will not be strange that turbid water has generally been held in great esteem for irrigation on account of its fertilizing value. When such sediments are laid down upon sandy soils it will be readily appreciated that the gain to the field is far greater than that due to the mere plant food which the sediments contain.

It is affirmed that in Egypt, under the old system of the Pharaohs, basin irrigation which permitted the rich mud to collect in the fields kept them fertile for thousands of years, and they are so today; whereas in lower Egypt where the old practice has been abandoned in recent years for an "improved" system, which does not permit the utilization of the rich Nile mud, the fields are fast deteriorating in fertility, although only half a century has passed.

The above will prove how highly necessary it is in laying out a system of irrigation to take every precaution and to utilize every available chance to get the best results, and eventually the highest returns by judicious use of what available quantity of water can be stored, and by always aiming, where it is possible, to obtain such water that could do the highest duty to the soil, both in plant production and improving the soil itself.

Nature of Soil.

The most important consideration after the nature of the water supply, and the very nature of the water itself, is the nature and character of the soil to be irrigated.

Not all soils are alike in their capacity for retaining moisture and of permitting it to drain away, and this being true under one and the same conditions, one field might be benefitted by a certain way of irrigation, while another would, under similar circumstances, profit by better drainage.

It is this fact of varying capacity of soils to store water for given periods of time that, in the struggle for existence and of filling and refilling among plants, has led to the evolution of species which can thrive best in soils of certain texture. This is a fact of fundamental importance and consequence, and it is the duty of every irrigator to discriminate between one crop and another, as well as the exact amount of water required by such soil, in order to obtain the best results under all circumstances.

Reasoning from general principles, one is naturally led to anticipate that in an exceptionally dry atmosphere and under a clear sky the rate of evaporation, both

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from soil and vegetation, would be exceptionally rapid, and hence that enormous quantities of water would be required for crop production when compared with the demands of crops under more humid conditions. Experience, however, has taught that the high velocity of winds is much more responsible for loss of moisture in soil or vegetation.

When water is plentiful and is being used freely, and especially where irrigation by flooding is being practiced, the soils having the coarsest, most open, texture will waste the most water by percolating through the zone of root feeding. Hence on this account the duty of water would be smaller on these soils than on those having finer texture. But, on the other hand, the surface evaporation from the coarser soils is so much greater than from the sandy soils that the quantity of water is much more nearly equal on them than it could be were it not for those opposite characteristics.

The character of the sub-soils, as well as that of the surface soil, is an important factor in determining the quantity of water, especially in the hands of the unskilled irrigator, and particularly so if he possesses no knowledge or exercises poor judgment regarding the water-holding power of the soil to which the water is being applied.

Where the texture of the sub-soil is coarse, and its water-holding powers small, it requires the best of judgment, both in regard to the amount of water which may be applied at one time and as to the rate it should be led over the surface or along the furrows, in order that there shall be no waste by percolation below the depth of root feeding.

After the above general principles it becomes necessary to inquire into the more practical part of irrigation or the distribution of water, with proper regard to the nature of the water supply, and the character of the soil to be irrigated, but no less to the surface conditions and slope of the land.

When water has been provided for irrigation and brought to the field where it is to be applied, the steps which still remain to be taken are far the most important of any in the whole enterprise, not excepting those of engineering, however great, which may have been necessary in providing a water supply which shall be constant, ample, and moderate in cost; for failure in the application of water to the crop means utter ruin for all that has gone before.

Right Practices.

To handle water on a given field so that it shall be applied at the right time, in the right amount without unnecessarily washing the soil or injuring the crop, requires an intimate acquaintance with the conditions, good judgment, close observation, skillful manipulation, and patience, after the field has been put into excellent shape; and right here is where a thorough understanding of the principles governing the wetting and washing of soils and possible injury to crops as a result of irrigation becomes a matter of greatest moment. There is great need of more exact scientific knowledge than we now have to guide the irrigator.

One of the commonest mistakes of beginners in irrigation is the use of too large volumes of water in one place and hurrying it over the ground too rapidly. It must be kept ever in mind in all sorts of irrigation that the eroding and transporting power of water increases with the velocity with which it moves, but in a higher ratio; to double the rate at which water moves in a furrow, or over the surface, increases its power to wash and carry the soil forward nearly fourfold.

In good irrigation the water is forced to move so gently that it runs nearly or quite clear and without washing the sides or bottom of the furrows, and if one does not succeed in securing flows without washing the only conclusion which should be drawn is that the right way has not yet been learned, not that it cannot be done.

Naturally the steeper the slope of the furrows the faster the water tends to run; so, too, when the slope remains the same, the larger the volume of water in the furrow the faster the water will flow, and these two principles give the irrigator nearly complete control of the situation.

If the ground is flat and the water moves too slowly increase the amount in the furrow, and if there is not water enough to do this decrease the number of furrows handled at a time. If the water runs too fast and washes, divide the stream into more furrows until the movement comes to be the rate which does not wash or erode.

The most essential point in the distribution of water is to have the furrows on a nearly uniform slope so that the velocity of flow will be nearly uniform through their entire length. If the same grade cannot be secured throughout it is better to change from a steeper slope to one more flat than the reverse, because then the reduction in velocity will be partly made up by a greater depth of water in the furrow on the flatter reaches.

Flooding.

When large areas of land are to be irrigated in single blocks there is no method of applying water which is so economical of labor and of time as the system of flooding, wherever it is possible to establish and maintain the best conditions for it, and there is no other system which permits of so uniform a wetting of the surface.

There are two fundamentally different systems of flooding. One covers the surface of the field with a thin sheet of running water, maintained until the desired saturation has been reached, the other covers the surface with a sheet of standing water which is allowed to remain until the soil has absorbed enough when the balance is drawn off, or simply as much water as is desired is placed upon the land, and this remains upon the surface until it is absorbed.

These two systems are used mostly for crops like small grains which closely cover the ground and where inter-tillage is not practiced.

Personal experience has taught the following system in flooding where the natural slope of the ground is good. A distributing ditch or main furrow is carried along the highest edge of the field to be irrigated.

When plowing is commenced the entire field is divided into lands 12 yards wide, so that after the plowing and harrowing is completed the land forms parallel ridges at a distance of 12 yards apart; and along these parallel ridges furrows are made by using a V-shaped plough with a double concave moldboard throwing the earth both ways, and thus forming distributing furrows. The ridge of earth on either side of the furrows serves the purpose of borders to the land, which prevent the return of the water to the furrows after it has been thrown out by a dam. Where the stream is not very strong, an ordinary grain bag, with or without a little ground in it, forms a very effective dam and prevents washing.

If, however, the slopes of the field are steep, and especially if they incline in various directions, an entirely different system of irrigation should be followed and flooding is practically impossible. In this case water-furrows are made across the surface of the slope nearly along contour lines and fairly close together, allowing as little fall as possible, and only so much as is needed to carry the water forward. An ordinary plow would be preferable to a ridge plow, and the furrows should then be drawn with the ridge toward the lower slope. In watering by this method the aim is to throw the water over the lower edge of the furrow in a continual sheet or else at short intervals, to flow down the slope until the portion of the field within reach has received what is needed.

Here again personal experience has proved that in many instances it is better to allow the water to run along these contour furrows until the entire stretch between any two furrows is saturated. This process requires no continual stopping of the current, which on very slopy lands is no easy task.

Furrow Irrigation.

In orchard irrigation, several methods of distributing water are practiced, but there is none followed so generally and with such good result as the furrow method, where the water is allowed to flow slowly in small streams through the furrows for a long time, somewhat after the method above described in slopy lands, until the water has penetrated by percolation beneath the surface, and at the same time has spread broadly by capillarity sideways under the surface mulch to the roots of the trees.

No matter from what standpoint the entire subject is regarded, one fact stands out pre-eminently above all others, and that is the infinite advantage of irrigation over all other methods of agriculture. The very fact of the extent and geographic range of irrigation all over the world (whether the system be as large as in the Indus basin and along the Nile regions where mighty rivers have been diverted from their course in ancient times, or whether a system is kept by windmills, Noria pumps, or even sacks drawn by a mule, as quite recently practiced in some parts of South Africa) indicates that it has become an innate desire in mankind to assist nature by storing waste water in normal times for utilization in the production of the necessaries of life during abnormal droughts.

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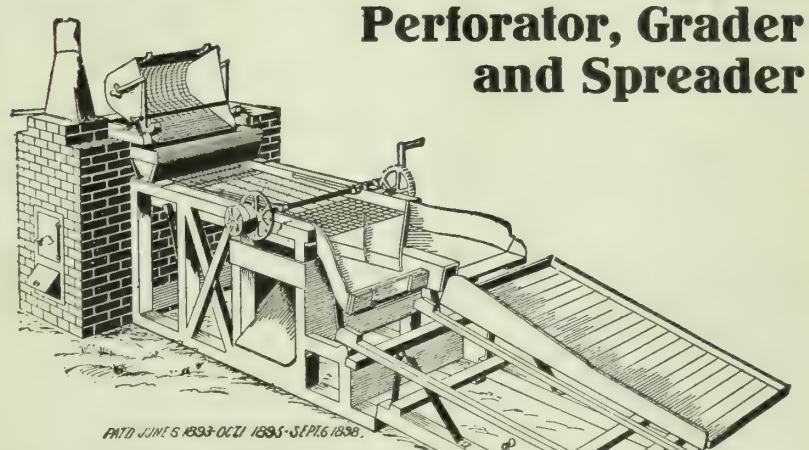

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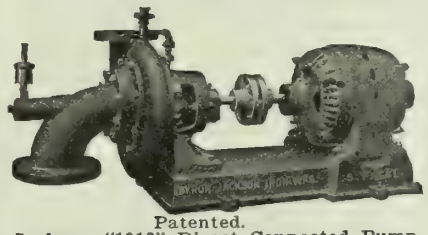

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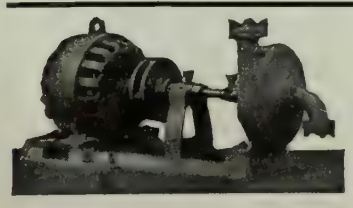

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The Race and Labor Problem.

To the Editor: I desire to commend your stand on the Japanese question as indicated by your recent expressions on the subject. You are right in thinking the question only a part of a very much larger question. Many of the older countries of the world long ago felt the need of some opening for their surplus population. A great proportion came to America. Many of these early comers found the opportunity to get more land than they could cultivate themselves, and they bought negroes to cultivate the land for them. Nature furnished the land; the negro did the work; the land owner did nothing, but he lived on the fat of the land, and held his head high and his supporters in a proper degree of contempt.

That was perfect parasitism, and now, the Southerner, feeling the squeeze of overpopulation, facing a black wall, the heritage received from his progenitors, must look to some other land for a place to gain a livelihood.

The native population of all the other States east of the Mississippi have for years been feeling the press of the overflow population from Europe, and they have been steadily migrating westward, and even now they are swinging northward into Alberta. If we do not take the steps to prevent it, there will soon arise on the Pacific coast a brown wall that will be even more impenetrable than the one of darker hue in the South.

When that day comes, and it would not be long in coming, the overflow population from the east will be compelled to seek an outlet in some other country. Then why invite aliens to our land, with the full knowledge that by such action, at no distant day many of our citizens will be compelled to seek other countries, and themselves become alien?

If any one desires to know how the Asiatics will reciprocate the privilege they are now asking of us, it is only necessary to notice the anti-alien labor and land laws of Japan and the attitude of the Chinese shown in the Boxer uprising.

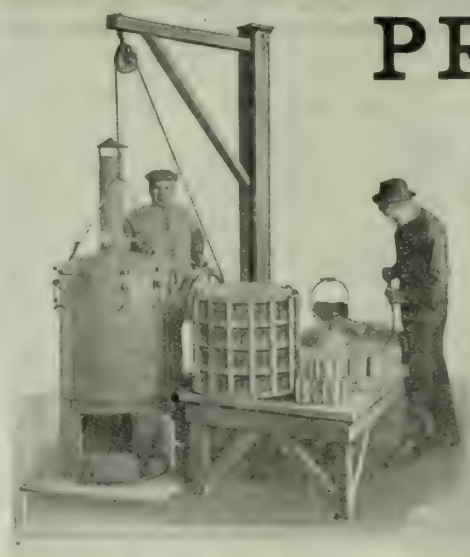
There are, it is claimed, approximately 55,000 Japanese in California, and in the United States there are over four millions of idle workers. Small effort would be required to recruit from this army of job hunters enough Americans to perform the work now done by people from Asia, and the result would be a distinct gain to those who ought to have the first chance at the job, and certainly California would suffer no economic loss thereby.

Very many times as many Americans as Asiatics are now and have ever since agriculture began in California been doing efficiently, every kind of work that is to be done, not only on the delta or island lands, that lie adjacent to the lower reaches of the two great rivers, the Sacramento and the San Joaquin, that drain the two great interior valleys of the same names, where high temperatures do prevail in summer. They do the work and thrive in spite of the heat which being dry, is no more oppressive than eighty or ninety in humid climates. This, coupled with the cool nights that almost invariably prevail, make it a comparatively pleasant and healthful climate in which to live and work.—W. O. Retherford, Oakley.

Mr. Retherford in an accompanying communication, not for publication, says also: It is time Easterners awoke to the fact that it menaces Easterner as well as Westerner, residents of every other State as well as ours. I think every Californian having friends in the East should write them, or even better, write his home paper on the subject. We agree.

We do not agree with the reflection on the early Southerners, but it is very plain that this very proposition of having another race to do the actual work has brought a problem to the South that is many times over more troublesome than all that work would have been if performed by white free labor. Better for all concerned if the work for a while had been left undone, or been accomplished gradually rather than done by negro slaves. The nation is unanimous on that general fact, and unrestricted employment of the yellow races to do labor would be more disastrous many times over than the black labor has been, for the negroes are Americans also and loyal, though differ from us in color. The race problem on the Pacific Coast, if it ever becomes a problem, will press as strongly on the East as on the West. We all agree on that, we all agree that the white race can perform the labor well, can thrive in any California work or California climate.

Now, if Mr. Retherford will only start a solution of the problem of getting that 4,000,000 army of the unemployed to work, we can forget the race problem altogether, the race problem is not in it with that. We can yell for help but a big slice of the 4,000,000 continue to either hunt for jobs in order to avoid them, or hunt for the best method of living easy when they do get a job, or else insist on doing things just their way and in no other, or insist upon doing just one certain kind of work and no other, or working with people of some certain temperament, or under some certain other conditions, or perhaps they are just naturally useless. Meanwhile a good part spend their time making the air blue with railings on government crookedness, the competition of the immigrant, the oppression of the employer, or what not. There sure is a screw loose with our system of operation some way and may his fame long live in history who tells us how men who want to work and won't work can get to the job that wants them.



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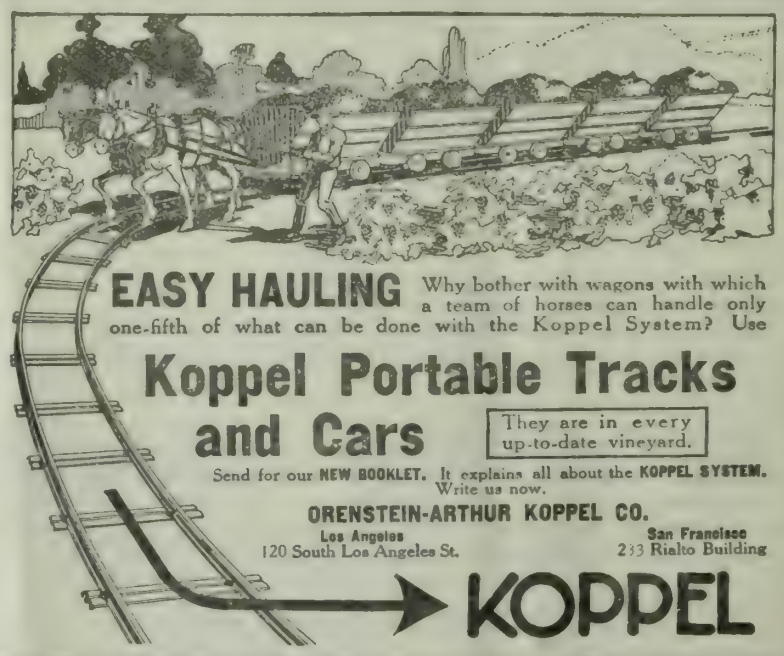

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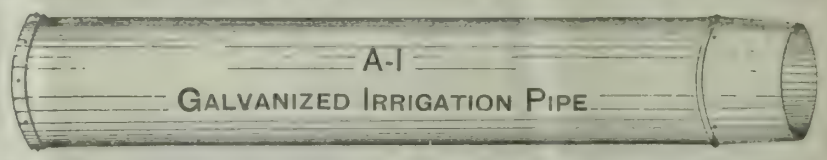

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Results of Asparagus Fertilization.

This spring through these columns we suggested some trial experiments in fertilization for the Golden State Asparagus Co., Isleton. The cutting season is now over and the first part of the results can be noted. The ranch superintendent, W. J. Phelps, very kindly has forwarded us a report of the yield of the various plots, together with record of fertilizer applied. These we are very pleased to reproduce here as valuable to others than asparagus growers as an illustration of the method of carrying on fertilizer experiments and judging results.

The amounts and kind of fertilizer applied, together with the average yield per day for the cutting season are as follows:

Plot. Fertilizer in lbs.	Yield lbs.
1—400 super. 200 potash	47.54
2—400 super. 200 potash, 1,000 limestone	48.50
3—400 super. 200 potash, 200 nitrate lime	51.88
4—200 potash 200 nitrate lime	45.20
5—400 super. 200 nitrate lime	41.28
6—Blank	41.97
7—25 tons stable manure	52.06
8—720 lbs. hydrate lime	48.20

The above materials are: super., superphosphate; potash, sulphate of potash and the lime in plot 2 as ground limestone. The amount of stable manure is only approximate.

The superintendent states that these beds were cut alternate weeks through the season and the average of all cuttings is given above. The asparagus was cut eight inches long.

He further states that, "Owing to the drouthy season and the time of application, these experiments are not in our opinion, very conclusive, but we intend to treat the beds with another application of the same fertilizers and record the result the coming season. This will give the chemicals ample time to assimilate, so that it should give quite reliable data for our soil."

More Results Later.—Despite the intention to repeat the application next year, without doubt many readers will like to have some conclusions drawn from the results as they stand. In the first place it is our belief that the effect of fertilization has only started, that the fertilizers have shown only a small part of the results that they will probably have and for this reason:

In one very important sense the cuttings of asparagus are not made from growth that occurs while the cutting is going on. They are made from food which the plant has stored up during the previous year and anything put in the soil before the growth above ground starts will not have a great effect on the spring yield. Still there is a good probability that some effect would be noticed, which would be seen in the above report. The greatest effect, however, will probably be noted in the growth between now and fall and that growth will be better detected in the cutting of next spring than this. That is, to get the real results of the fertilization done this spring it will be necessary to keep track of the cuttings of next spring. We might almost suggest that no fertilization of the plots named above be made at that time, but to wait until the full effect of this fertilization can be seen. There is also a strong probability that a better growth will be seen by inspection on some plots than others this summer so that an approximation of fertilization benefits can be made even before next year's cutting is begun. If so, fertilization can be used over the ranch next spring on a practical rather than an experimental basis.

Interpretation of Results.—According to the weights of asparagus secured, some tentative conclusions can be reached even now, which are not of much value until verified by weighing next year's cuttings. It will be realized, however, that one year's results, no matter how good they appear are not conclusive, and there is nearly always enough difference in plots of land to make one or more produce a greater than others when all have identical treatment. However, things come out pretty well here.

The unfertilized plot, for example, is one of the two lowest, quite a bit below the average. The other low plot contains neither potash nor lime, while every plot that contains potash produces fairly well, also the lime apparently had a good effect. The nitrate of lime, which does not seem to have done a great deal of good, would be valued very largely for the nitrogen it contained, as the sweetening effect of such a small amount of free lime as 200 pounds contains would be unnoticeable.

There is the confusing fact that although superphosphate and nitrate alone do apparently little good, the plot with the same and potash does better than the potash and half a ton of ground limestone, although hydrate of lime is quite effective. This will be accounted for by differences in the plots naturally.

The benefits of the stable manure are to be expected, as that is everywhere recognized as a fine fertilizer, containing all the plant foods and improving the physical condition of the soil. The 720 pounds of lime hydrate would be expected to do good, being an excellent soil corrective and stimulant, even when soil is not sour, and even better when the soil is sour. The ground limestone might be equally beneficial, but would need heavier rains to soak it in, which this season did not develop. That might be one reason more marked results were not secured from it. The benefits from potash are to be expected, as peat is likely to be deficient in this material and in lime.

The indefinite conclusions from such small data therefore would be that superphosphate and nitrogen are not required commercially for this soil, that potash and lime are good, that stable manure, when available, is a benefit. All these correspond fairly well with what would be expected in theory.

More important than these results, however, are the results which may be shown by the growth of top this summer and fall and by the consequent yields of "grass" next spring. We hope to receive them and that definite conclusions may be drawn from them, which conclusions may however, conflict with the above indefinite ones.

In concluding will say that in spite of the fact that full results cannot be expected for about 16 months after applying the fertilizer, spring is the time to apply it in order to give the material a chance to work into the soil. The effect of the fertilizer of course will also last more than a single year.

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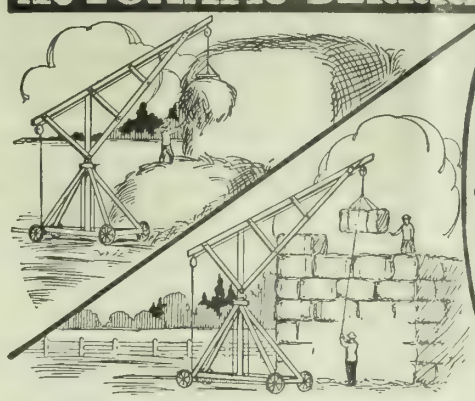
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AGRICULTURAL REVIEW.

With the Fruit Men.

The California Apple Show, to be held at Watsonville, Oct. 6th to 11th, will be just what its name implies—a California Apple Show. Last year there were fifteen counties represented in the exhibits, and this year it is hoped that a larger representation will be had. No charges are made for entry, space or paraphernalia; the premium list amounts to $8,000, all contributed by manufacturers from all parts of the country, as well as Watsonville merchants. This annual event is the biggest thing of the kind on the Coast, and every fruit grower should attend for one day at least.

At a meeting of the Farmers' Union held at Union School house, Santa Clara county, last week, the following report was made as to the holding of prunes over the season: The results reported were a loss of from 4% to nothing in weight and a loss of from two points to a gain of five points in grade. The loss and damage from the hot spell of last week was reported heavy, also heavy loss was caused by the wind storm of Saturday, many tons of green prunes being blown to the ground. A vote was taken advising the members and recommending to the county union that prunes be held for a 4½ cent basis this year.

Negotiations have been under way for the past week for the transfer of the Lodi Grape Juice factory to the Citrus Products company. It is stated that if the sale is made the new owners will manufacture orange juice, oil and orange peel.

Apple growers and packers of Washington, Oregon and Idaho are now working together to expand markets the coming season. Many local shipping associations are being formed and connections are being made with the world's markets in the effort to dispose of this year's crop at a fair price. About 10,000 cars of apples is stated to be the prospect for the Northwest this season.

A circular letter sent out by the California Cured Fruit Exchange at Sacramento this week, states that the recent hot weather seriously damaged prunes and other fruits. As a result, the Exchange contends that the prune crop for California will not be larger than one hundred million pounds. Were it not for unsettled financial conditions prices would be very high and the circular says that growers will be very foolish to sell their dried fruit unless they get good strong prices.

A convention of over 300 prune growers was held recently at Salem, Oregon, for the purpose of improving the quality of fruit grown and packed. Oregon, Washington and Idaho were represented.

The hot weather of two weeks ago caused more damage to prunes, peaches and grapes in the Sacramento valley than was first supposed. Where the foliage was particularly heavy the damage was much less than in groves where the leaves were light.

According to the report of the California Associated Raisin company, the sales of raisins for June were much heavier than generally supposed. These figures show that June shipments of raisins in 1911 amounted to 752 tons; in 1912 to 784 tons, and in 1913 to 717 tons, including shipments of individual packers as well as of the Associated.

The demand for early apples is so great that the shipments of Gravensteins from Sebastopol are very large, and producers are getting good prices.

Packing houses at Dinuba are all busy now getting out plums, peaches and seedless grapes for the eastern markets. The crop in Fresno and Tulare counties has been largely contracted for, but as the Elberta peach crop will be larger than expected, there will be lots of fruit to go east.

It is expected that prices for the 1913 raisin crop will soon be given out by the California Associated Raisin company, and as this concern claims to have under contract 94.4% of the raisin grape crop of this season and 90% of the hold-over

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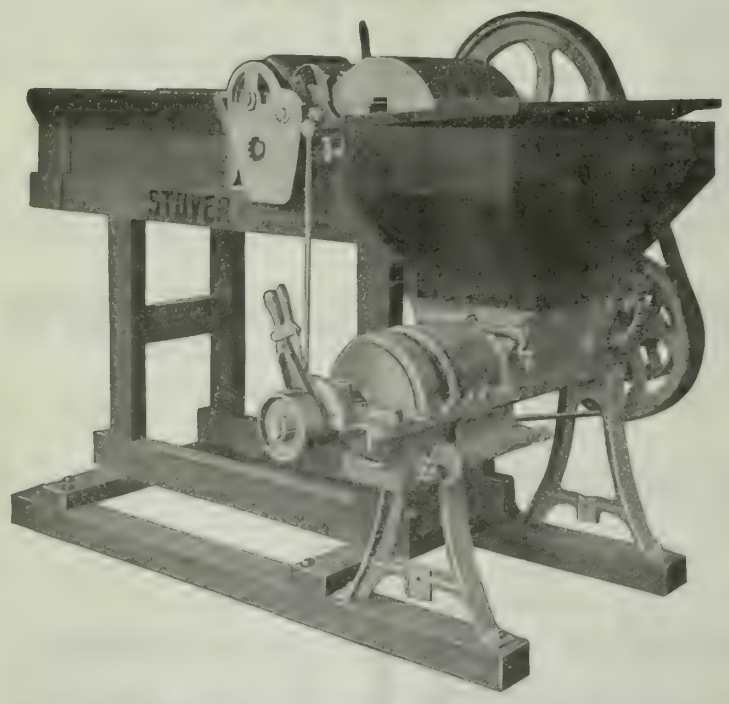

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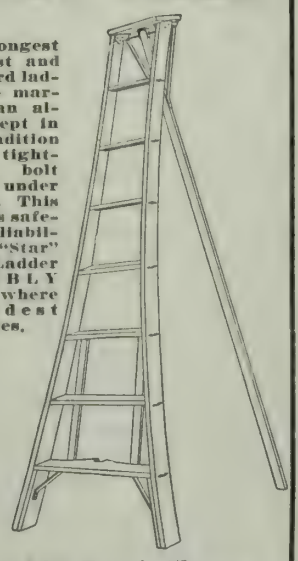

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crop, it may be said that its price will be what the trade will pay this year.

In discussing the effect of the recent hot weather on the grape crop, L. T. Mason, of Lodi, stated that he thought the damage would be light in well irrigated tracts and heavier in drier places. His estimate of the crop for shipment would be more than 5,000 cars, or about the same as last year.

The new packing house for the Santa Rosa Cured Fruit Association is now being built. The building is to be 54x74 feet and three stories high. President Baker states that the recent hot spell did very little damage, and that the prospects were fine for apples, pears, prunes, etc.

General Agriculture.

A 2,200-acre field of barley on the edge of Lake Tulare is yielding over 30 sacks to the acre. The crop in the lake section will be above the average this year.

Turlock melon growers were pleased to have the buyers pay $12 per ton for their melons last Saturday. This higher price was caused by the fact that only 40% of a crop was raised at Dinuba. Cantaloupes at Turlock brought $1.20 to $1.85 per crate on July 19th.

The alfalfa tonnage in the section around Alpaugh, Tulare county, is proving to be very heavy this year. Hay shipments from that point will be heavier than ever before, it being stated that the total for all kinds of hay will be from 250 to 300 cars.

The tomato crop grown on twelve acres near Wheatland by A. A. Huber and Fred Beilby has been sold to Falk & Co., of Marysville. The crop is expected to average ten tons per acre, and is now being shipped out at the rate of a carload a day.

The big crop of sugar beets raised by the Alameda Sugar company in Sutter county will soon be ready for harvest. The crop is unusually large owing to the land having been placed under irrigation.

A dispatch from Biggs states that the rice crop in Butte county will amount to 15,000,000 pounds this season. At present there are about 3,000 acres growing rice in the southern part of that county.

The Sonoma County Fanciers' Club has decided to make an exhibit of poultry at the Santa Rosa fair, September 1st to 6th, inclusive.

At the monthly meeting of the Tulare Co-operative Poultry Association held last week, $4,200.24 was paid to its members for eggs and poultry sold during the month of June. Prices paid for eggs for June were: 23c for selected, 22c for ursts and 21c for pullets.

The quarterly of the San Mateo County Poultry association will be held at San Mateo, August 5th, at 7:30 p. m. Details of the coming poultry show will be discussed.

Tehama Fruit Hurt.

A statement of fruit conditions in Tehama county has just been received from Commissioner Chas. B. Weeks, in which he says that the hot north wind of July 8th caused quite a drop in prunes and pears. His estimate of the crop at this time is: Table grapes, 80% of normal crop; apples, 50%; prunes, 50%; peaches, 50%; pears, 10%; and plums, 80%.

Land Development.

The barley crop around Dixon, Solano county, is turning out better than expected. Three big warehouses there have already been filled and more grain is coming in.

Many irrigation wells are being drilled in Hemet valley section and pumping plants are being put in.

The 450-acre ranch of the J. T. Whitney estate, located near Pleasant Grove in Placer county, was sold last week to J. A. Livingstone, of Auburn, who will subdivide and colonize it.

In the Cahuilla valley near San Jacinto contracts have been made for the sinking of many wells by the new settlers in that district.

Last week 200 acres of land near Palermo was purchased by Iowa parties, who, it is stated, will irrigate it with big pumping plants and plant the whole tract to olives next season.

A. J. Keene, of Los Angeles, has purchased the 640-acre Souza ranch near Hornitos, Merced county. The new owner proposes to put in an irrigation system and plant 300 acres to alfalfa.

A tract of land near Terra Bella, in Tulare county, comprising 1,000 acres, is to be seeded to alfalfa the coming season by L. C. Shattuck, the new owner from Arizona.

George A. Smith, of Corcoran, has just had completed on his ranch an artesian well, which at 967 feet flows enough water to irrigate the 480-acre ranch more three times per year.

The *Ventura Democrat* states that the big Patterson ranch of that county is soon to be sub-divided and sold to settlers for intensive farming. This fine tract has been used for beets and beans for a long time.

The Valentine ranch of 150 acres, near Esparto, was sold last week to G. A. McPherson. As the land is seeded to alfalfa the new owner will establish there a high-class dairy.

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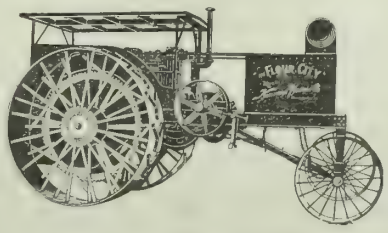
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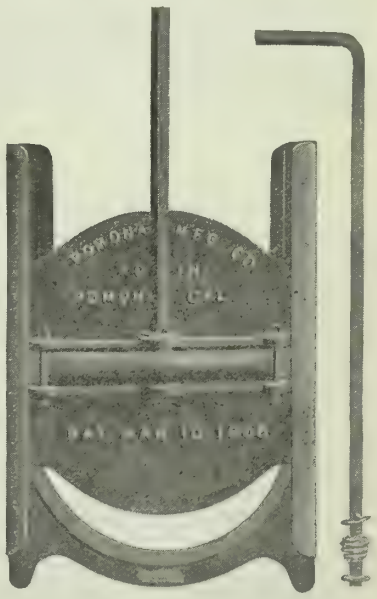
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Professional Man as a Breeder.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

We often hear people say that the back to the land boom will result in a great many failures. No doubt a good many failures will be made, but one often sees instances when professional men and business men have made remarkable strides agriculturally, and when one looks for the cause he usually finds that good business principles have had a great deal to do with it.

A very noticeable instance of such success can be found on the Oak Grove Dairy Farm, of Woodland, owned and managed by Earl Armstrong.

This man, after completing high school, had taken a university course in civil engineering, and after some time at that business decided to rent 100 acres of land near Woodland belonging to his father. The ranch had been rented out for some time and was in poor condition. Believing in the future of hogs and dairy cattle and also that they would build up the land faster than any other one thing, a herd of grade cows was purchased and hogs were run as a by-product.

Data were kept on receipts and expenditures and it was found that the hogs were making big money on the investment and would make more providing more were kept.

In order to get this extra stock, young stock hogs were bought from other ranchers and fattened. In this way it was found that skimmed milk was worth a great deal as a hog food, but was much better when used with some barley or other grain.

Although the intention had been at first to run the hogs as a by-product, they were found to be so profitable when properly fed and handled that they soon arrived on an equal footing with the dairy cows.

In fattening the hogs it was soon discovered that the better bred hog was usually put in marketable condition at a great deal less expense than the scrub stock, so pure-bred sires were purchased. This experience finally led to the buying of some pure-bred Berkeshire boars and sows and a small breeding establishment started. Although the most interest was displayed toward the hog end, the dairy was not neglected, as with a great deal of alfalfa, cows could feed it out with a good profit to the owner, and also provide one of the chief feeds for the hog lot.

After getting into the pure-bred business Mr. Armstrong made a careful study of pedigrees and types under the tutorship of Mr. Herrold of the Four Oaks Stock Farm. In this way he became familiar with all of the Four Oaks' stock, and after Mr. Herrold's death last year purchased the remaining Berkeshire stock of that farm. This herd was considered one of the best bred herds of Berkeshires in the State, as is perhaps known by most of our readers.

There are so many individuals now on the ranch deserving mention that we only take space here for two boars, namely, Artful Masterpiece 110970, and Ravenwood Longfellow 10th 136430, pictures of which are shown. The boar, Artful Masterpiece, was farrowed Aug. 25, 1907, by W. S. Corsa, of White Hall, Ill. His sire was Masterpiece 7700, who was considered one of the greatest boars on record, his produce being sought for, all over. The dam was Lee's Arthur Belle 30th 100878, said to be a wonderful breeder and a fine individual.

Artful Masterpiece himself has first prizes at Oklahoma, Illinois and California State Fairs, and is certainly a fine individual in all respects.

The second boar named, Ravenwood Longfellow, was sired by Longfellow's Rival 5th 121891, his dam being Ravenwood Duchess 50th 122537. He is a very typey hog, being of the De Bow type. He is one of the most preponent boars in the State, and has many prize winning offspring at the California State Fairs.

After the addition of such a large number of pure-breds, the ranch was turned into a strictly breeding establishment, and as a natural consequence all young stock is sold for breeding purposes.

It would seem that the secret of Mr. Armstrong's success as a breeder lies principally in the fact that he was eager to learn, secured accurate data of his feeding experiments, and last but not least, tried the business out with grade stock, thereby learning the ins and outs before expending large sums of money for pure-bred stock.

As an instance of this he found by experimenting that better bred hogs pay, that a hog partly fed on grain after weaning until marketed would bring from one to two cents more a pound, and also that the best hog ration he tried for fattening hogs was two-thirds barley, one-third skim milk, and alfalfa pasture.

In concluding, we should say that if all professional men made the success this man has, California farming would be greatly benefited, as anyone who furthers the interest of the pure-bred hog as Mr. Armstrong has in such a short time is certainly helping the State to realize the utmost from the hog industry.

Boars That Show Their Breeding.

LIVESTOCK SUGGESTIONS.

[By J. C. LOOMIS.]

The publicity given the silo this year has evidently been one of the chief causes for the building of so many. As one travels over the State a great many new silos may be seen either completed or under construction.

Anyone who is still skeptical about the growing of corn in this State should go out into the country in most any irrigation section and see the patches of maize scattered over the country. A large part of this corn is being raised for the silo.

It seems to us that an opportunity presents itself this year to grain men that they are not availing themselves of as thoroughly as they might. With thousands of acres of grain that is too short to be harvested, one way to realize fair returns from it would be to turn on a bunch of stock hogs.

While prices for all kinds of hogs are good at present, reports from the East indicate that they will be still higher, but even at present prices they can be profitably handled on these fields of grain, and grain fed hogs will bring top prices all over the State.

This journal has been a staunch believer in the purebred sire. While some claim the sire is half of a herd we often think he is more when we see the results obtained through breeding up. The price of a good bull or a good boar is less today in this State than anywhere else in the country, breeding considered, and the stockman who thinks $50 too much for a boar, or $150 too much for a bull should study prices in the East where the purebred sire has become a recognized necessity.

Before starting with another grade bull for the herd drop a postal to any of our livestock advertisers who can, we are sure, satisfy you as to breeding and prices.

Breeders of livestock who expect to exhibit at the State Fair this year should have their stock picked out and begin to round them into shape at this time. Many an animal has been put at the bottom of his class through improper fitting, and the public like to see well-groomed animals. A hog breeder recently told us that he lost a great many sales last year by not having his stock in good condition.

A solution of lime and water applied with a brush on the inside of the drinking trough will keep vegetable matter from accumulating in the trough. By applying this solution once a month and by sprinkling some lime into the trough every two weeks the drinking water will keep pure and clean.

Clean water is as necessary to the health of animals as it is to human beings, and it is hard to keep this fungus matter out of the trough unless some care is given to it.

During the summer months flies are one of the worst pests that the dairyman has to deal with. To overcome them, the separator house should have good screens at all openings and be thoroughly cleaned twice a day as soon as possible after milking.

Drains should be provided to carry off the water from the separator house and the liquid manure from the stable.

A very good thing to keep the stable odor down and keep flies away is gypsum sprinkled freely over the floor after cleaning.

On ranches where hogs are kept, ample room should be given them for exercise, especially if they are not to be used for breeding purposes.

Although it is true that hogs will grow fat in small quarters, they do not get enough exercise if so kept to give them a good strong constitution, which is one of the most essential points for breeding stock.

A Noted Jersey Show Herd.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

In the past when the term, Jersey breeder, was used, our mind invariably has wandered to the name of N. H. Locke & Co., at Lockeford, San Joaquin county. Perhaps others have also closely associated the two names, not because they had visited the ranch, but from the fact that at every State Fair, for several years, N. H. Locke and his Jerseys were always very much in evidence. That catering strictly to the show end has paid in the past is more ably demonstrated with this herd than any other in the State, for while the owners have done unofficial testing at times, the herd's reputation in the past has been founded chiefly on the showings it has made on the fair circuits.

While the herd is the big story, the ranch and its history is also interesting, as most of it has been held by the Locke family for a great many years.

The land which is to provide feed for this herd in the future is 335 acres, most of which is subirrigated bottom land, located along the Tuolumne river. On such land as this, alfalfa grows about as rank as we have ever seen it, averaging two tons per cutting, with a total of 10 tons per acre a year. Although in ordinary years this can be done, at times the river overflows, and then, of course, much work is necessary to re-seed, etc., but we understand that this will soon be overcome through reclamation work.

The location after such reclamation work is completed will be almost ideal, as the dairy buildings can be erected on the high ground which affords fine drainage facilities, and the rich bottom lands will always provide sufficient feed such as alfalfa, corn and root crops.

The dairy buildings are all located in the town of Lockeford, at present, but new buildings are contemplated to be erected a short distance from town on the high ground.

Perhaps the most interesting feature of the dairy equipment are the four Sharpless milking machines in use. As usual where machines are in use, they have been found to be big labor savers, and are run at a vary small cost of maintenance. These machines are differently constructed than any other machine on the market, as they have what is called a backward squeeze, which, it is claimed, forces all blood back.

At the time of our visit, 61 cows were being milked with the machines, two men doing all of the work. One man looks after the machines and one man does the stripping behind the machines. By this method the cows do not have to stand for a long time before being stripped, and results are considered much better. To show that the mechanical milkers are labor savers, we were told that two men with machines could do the work of four hand milkers and that two men milked the 61 cows in one and a half hours. The cost of maintenance is very small, power being furnished by an electric motor.

Although dairying has been carried on at this ranch for many years, it was in 1904 that the first purebred Jersey females were purchased at the State Fair. From these two cows the registered part of the herd was built up, until 1910, when it was decided to improve the herd with new blood, and a trip was made to Oregon, where 22 head were purchased, mostly at the Harry West auction sale. After purchasing this stock the herd included the bull King's Valet, who took first and senior championship at the Sacramento State Fair, and the cow Empress Lass, who as a two-year-old was the grand champion at the Alaska-Yukon Exposition and who is one of the finest individual Jersey cows in this State at present.

One of the outstanding young sires on this ranch is the two-year-old Valet's King, sired by King's Valet and out of the cow Empress Lass. This young fellow is a grandson of Gerties Lad, and received four junior championships at the fairs last year. Perhaps the highest praise which could be paid this young bull is that Mr. Locke is holding him as his best prospect for exhibition purposes at the Panama-Pacific Exposition in 1915, and as this breeder knows the show game thoroughly, it is perhaps as good a recommendation as an animal could receive. Although there are many other likely looking individuals, one can see from the above that this company has a right to be called one of California's premier Jersey breeders. At the time of our visit there were 175 head of milk cows, about half of which were grades, and any one who is still undecided as to the value of purebred sires should visit this ranch, for through the use of registered bulls on the grade stock a herd of grades has been built up which, when mixed up with the purebred herd in the barn, are impossible to pick out by one not familiar with the herd. We were informed that in the future official testing would be done, and when it is, no doubt some excellent individual records will be made.

STOCK FINISHING APPROVED.

To the Editor: I note the article, "An Impending Revolution," in issue of July 12, 1913. You are keeping up with the times, and the change mentioned will surely be of great benefit not only to the livestock man, the alfalfa man, and the slaughterer, but to the consumer, who as a rule has to be contented to take whatever the butcher has to offer in the meat line, and with plenty of finished beef in the market there will no call for the half-fat stuff which is now placed on the block.

Some of our live stock men in this county (Merced) have been unloading many cows that could hardly be called half-fat, for anything that they will bring through commission sales in San Francisco. Now, if this class of beef could be put into the hands of the alfalfa man or any other person who has the proper range feed, both parties in the transaction could be making a greater profit and the public would also be benefited.

Right in line with the thought expressed in your article comes an advertisement in our local Le Grand paper as follows: "Anybody having fat cattle, feeder cows or steers, two years old and up, for delivery between August 1 and September 15, write to or leave word at the Advocate office." I wish to state that the person who inserted the advertisement is a buyer from the southern part of California, and part of his purchases here of live stock go to the sugar beet factories, but most of them are distributed to the various small farmers in the neighborhood of Los Angeles. He acts in the capacity of the commission man referred to in your article.—E. T. C., Le Grand.

Evidently the proposition of getting half-fat stock from the hands of the range man into the hands of the alfalfa raiser is making lots of progress, and before long will be in full blast.

There are some peculiar ideas held. Some are typified in the statement of a large stock man: "There's nothing in it. When the range is bad, the alfalfa is too high, and when the range is good there will be more profit in finishing the cattle on grass than in selling them to the alfalfa man." According to that proposition there would frequently be just the condition stated by our correspondent, the range man when he had to sell would think that he had no market except the packer and would sell poor cattle to the detriment of everybody concerned, including the consumer.

In spite of the extremely high prices for alfalfa, even now it can be seen that a few alfalfa men are taking advantage of their possibilities, and every year sees such improvement in irrigation systems and pumping plants that the alfalfa growers are becoming ever more independent of the season.

The price of cattle and the price of alfalfa work together nicely. When range is bad, it is true that alfalfa is high, but then alfalfa is worth more for finishing than in good years. Likewise, when the range is good, alfalfa is cheap, and the farmer can afford to work on a smaller margin of profit. Then, also, we can ship cattle in from elsewhere, just as they now buy cattle in Arizona to finish on the farms of the Northwest.

Under any conditions there is just as much reason for raising cattle on the ranges and putting on the finishing touches on the farm with alfalfa and corn silage as there is in having the cattle of Texas, Montana and other States finished in the corn belt of the Middle West. One part of the business helps the other, and all prosper.

There is a good chance for other "commission men" to start up a business, as the advertiser noted in the above letter is doing. When this finishing of range cattle gets on its feet the go-between that handles the cattle from range to farmer and from farmer to packer will have lots of work, and it is the early bird that catches the worm.

CONSERVING ALFALFA.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Although the present year is proving to be a hard one on many stockmen and dairymen, it is having also some beneficial results.

Perhaps one of the most noticeable among these is the fact that feeders of farm animals of all kinds are conserving feed such as they have never been compelled to before, and when the system of getting the most from feeds is thoroughly established, our stockmen will have solved one of their biggest problems. As alfalfa is the principal feed used by a great many of our stockmen, conservation of that crop is particularly necessary, and especially so at this time of the year when the crop is being harvested.

On a trip which we recently made through the large interior valleys we were very much impressed by the methods used in the storing and feeding of alfalfa hay on several dairies visited.

Although not a new custom, we refer to running the hay through a chopper and storing in that way rather than stacking or storing in the barn in loose hay form. There are several advantages to be derived from this method, the two most important being less waste in feeding and a greatly increased storage capacity for the hay barn.

The benefits from a feeding standpoint have been given in past issues of this journal, and results seem to indicate that the increase in butter fat when chopped alfalfa hay is fed to dairy cattle more than pays for the cost of cutting and handling the hay. Besides, this is a saving realized in feeding, for unless alfalfa is cut at exactly the right time and correctly cured there is bound to be a good deal of wasted stems left in the mangers. While this may not amount to much for one day, in a year it runs up to quite a good sized tonnage. Although this may be partially fed up in the calf and hog pens and to dry stock, there is still a great deal of it lost and with chopped alfalfa this waste is almost entirely eliminated as the stems and leaves are thoroughly mixed and cannot be sorted out by the stock.

Some may maintain that these coarse stems are of little feeding value anyway, but an analysis shows that they do contain much valuable nourishment. From a storage standpoint chopped alfalfa is undoubtedly the more economical, and while we have no data at hand as to how much more chopped hay can be stored than when bulk hay, one can readily see that there is a big difference, as it packs in very much like ensilage in a silo.

From the conclusion of those who have used chopped alfalfa we should say that stockmen would greatly increase the efficiency of their hay through the use of an alfalfa cutter.

INFECTION OF UDDER.

To the Editor: Last year one of my cows had milk fever which affected her udder. This year after freshening she milked two months when she suddenly went dry on one side of her udder. She is now badly stiffened up in her hind quarters and off her feed. Kindly give me your advice on cause and cure if there is any.—C. O., Modesto.

Answer by Dr. E. J. Creely.

The cow has infectious mastitis due to introduction of some infection. Give a saline purge (1 lb. glauber salt), inject peroxide of hydrogen, after which pump in sterile air. Apply externally camphorated oil once daily. Camphorated oil has a tendency to dry up the secretion of the gland and is used advisedly. I would, however, advise you to call in Veterinarian Haney or Jacks to give the otogerous vaccine. The vaccine works finely.

San Francisco Veterinary College.

Cow Feeding.

To the Editor: Should a cow be given all she wants to eat? We have been milking our cow nearly ten months and although during the spring when the grass was good she cut down on both her mash and hay, now that everything is dry she asks for more mash and eats a big armful of hay twice a day. A nearby dairyman says we give her enough for two cows. She is eating at a meal eight quarts of the dry mixture before the water is added, and eats it all. I have raised other varieties of animals, dogs especially, and always figured that an animal carrying young needed nourishing food. She is in magnificent shape and is giving five quarts of milk a day, being due to calf probably the last week in September, but was bred twice, two months apart, and the same dairyman says she is less than a month off, and that of course she will give milk when we feed her so heavy.

Will Burbank's cactus do well in the Mill Valley foothills? We have plenty of fog and wind and some frost. How do you measure frost? Part of our land, that on the southern slope, had no visible frost, but corn planted there did nothing, and that on the other side did fairly well when the rabbits had had their fill. —H. P. R., Mill Valley.

While a cow is milking for all she is worth it is perfectly right and proper to give her all she wants to eat, for without it she will not give as much milk as might well be secured. That does not mean, however, that she should be given all of the kind of food she likes best, as any cow will leave hay for a bran mash and other concentrated foods when she might just as well be given nearly all hay and only a little of the concentrated foods. If she gets all of the mash she wants she will eat more than is needed for milk or than she will turn into milk, will waste much hay, and the cost of feeding will be too high also. In fact, when the grass is green would not feed any mash at all, and seldom would give her as much as you are giving now if she has fair pasture and enough good alfalfa hay. Furthermore, it is much better to dry a cow up before she calves, and if a cow will not dry up any other way, dairymen gradually cut off something on the feed, leaving a little milk in the udder after each milking to encourage drying. A dry cow, or one nearly so, needs no concentrates at all. As far as the proposition of feeding and carrying young is concerned the cow is in a different class than other animals, for she has both the milk and the future calf to digest food for. If food is cut off gradually it will be taken from the milk, not from the calf, and both cow and calf will get along nicely. Dry cows on dairies, for instance, are considered perfectly able to get along nicely on pasture that would be rather slim pickings for a milking cow, or they are fed largely on the coarser part of alfalfa hay that other cows pick over but will not eat. That is not done for economy's sake especially, but because it both cleans up waste food and is better for the cow than to give her a lot of good feed. Care is naturally taken in such cases to see that the cow is given all the feed she needs to keep her in perfect condition. Many fine purebred cows have little except alfalfa hay all the year round.

Believe that spineless cactus will make a fine growth in Mill Valley foothills, but will need good soil and sufficient moisture to do so. Unless soil is well enough supplied with plant food the cactus will not live up to its possibilities anywhere. Fog and cold winds are not good for cactus as they stop growth. In Berkeley, for instance, these things make cactus grow very much slower than in the central or coast county valleys, as they do other crops. However, out toward Haywards the climate seems very suitable for it, and believe you will have nearer that climate.

Frost is measured by the number of degrees below 32°, or freezing point. Two degrees of frost thus means 30°, five degrees of frost 27°, etc. There will have to be much more frost than you have in Mill Valley to injure the cactus. It very probably was not frost, but fog and cold winds that affected your corn, or perhaps it was poor soil or lack of moisture. You would know if the frost came.

MYSTERIOUS HOG DISEASE.

To the Editor: I have at present three sick hogs. Have had two veterinarians and they don't seem to know what is the trouble, but both agree it is not cholera. The hogs get weak in hind quarters and stagger with hind legs when they first get up. After they are up they can walk all right. Nose seems to be stopped up, snuffle when they eat and eat very little, and will take nothing but slop. Fever is up to 106. These hogs have been running on alfalfa and have had some fruit. —H. E. L., Hanford.

ANSWER BY DR. E. J. CREELY.

These symptoms with temperature look serious. Call in Dr. Geo. Gordon at once to make a laboratory examination.

San Francisco Veterinary College.

FOR SALE

10 PEDIGREED HOLSTEIN-FRIESIAN BULLS, from 2 to 16 months old. Handsomely marked and well shaped. Prices reasonable. Call, or write to W. W. LAMON, SUPT. FLORIBEL FARMING & CATTLE CO., Hardwick, near Hanford, Cal.

We are now booking orders for this season's supply of

DRIED BEET PULP.

Those who have used this succulent milk-producing vegetable food and know the certain and profitable results obtained by its use, do not need to be told of its richness in carbohydrates and general desirability as a ration for dairy cows and that it is the ideal feed for use in combination with alfalfa, or as a substitute for bran and other grains.

The supply this year will be considerably larger than in 1912, but the demand is also greater and rapidly growing. To be sure of getting all that you will need we suggest that you place your order now either with your regular feed dealer or direct with us.

ONE TO FIVE POUNDS MORE MILK A DAY FROM EACH COW—IS CERTAIN—IF YOU FEED

The Palatable Succulent Vegetable Food

DRIED BEET PULP

Costs less than other rations. Keeps Indefinitely

THERE is no experiment in feeding dried beet pulp. We can show you to an absolute certainty what it will do, just as we have proven to thousands of other dairymen that it will actually increase the production of milk an extra 1 to 5 pounds per day from each cow. It will not only do this—the increase being noticed almost immediately—but will make your cattle healthy, sleek-coated, bright-eyed and prolong their milking periods.

If you are feeding an exclusive diet of alfalfa, just try the addition of dried beet pulp and see what a difference it makes. 1 pound of dried beet pulp will take the place of 1½ to 2 pounds of alfalfa—and produce more milk. It supplies what alfalfa lacks—carbohydrates and fat, making a properly balanced ration.

Dried beet pulp is light, bulky, succulent and easily digested; absorbs water very quickly and swells to about six times its original bulk; is cheaper than bran and produces better results.

Dried beet pulp is a uniform, dependable product—always clean and pure—packed in 100-pound sacks and can be had from most feed dealers; cows eat it ravenously as it is very palatable, either dry or moistened.

Try feeding dried beet pulp to one cow whose record you know and watch the immediate and substantial increase in milk production.

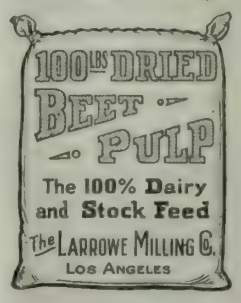
If your dealer can't supply you—write us.

You can prove it with one sack

Molasses-Dried Beet Pulp

We have also for those who prefer it, molasses-dried beet pulp—just plain beet pulp and beet molasses dried. It has all the feeding value of plain dried pulp with the addition of molasses. Being sweetened, cows eat it with relish. It is put up in the same way and sold on the same basis.

WRITE TODAY FOR OUR BOOKLET——"PROFITABLE FEEDING" with full information; also prices and instructions how to feed. Sent free on request.



THE LARROWE MILLING CO.

607 Central Building Los Angeles, California

Machine for Cleaning Milk.

To the Editor: We note on page 35 of the issue of July 12 of the PACIFIC RURAL PRESS that you have a request from Hughson, California, for information regarding the clarification of milk by using a cream separator. Undoubtedly you are aware that we are at the present time manufacturing a centrifugal milk clarifier which is constructed in somewhat similar manner to a cream separator, but acts entirely different on the milk.

This machine is so constructed that it practically takes out all loose dirt, hairs, slime, and other foreign matter in the milk, but does not in any way affect the the cream line. The pressure applied to the milk as it is passed through the De Laval clarifier bowl is something like 500 pounds to the square inch, but owing to the way that the pressure is applied it does not in any way affect the separation of the cream from the skim-milk. This is fully explained in a catalog, copy of which we are sending you under separate cover. If you should like duplicate copies of this catalog to forward to this party at Hughson, we would be glad to furnish them, and we will also be glad to furnish you more detailed description of this machine.

DE LAVAL DAIRY SUPPLY CO.

This communication should make clear enough the contention that a separator can remove impurities from milk and also adds some very important information regarding improvements in the process, so that the "cleaning" of milk is no more an incident to separator work, but in a class by itself. The account of the new machine in the catalog referred to and the story told in another small pamphlet of the impurities that are removed by the machine is most instructive. We will not forward the catalog, but might suggest that any person interested write to the company direct. This kind of apparatus, it can be said, is a new departure in the United States, but is in line to do a great work in supplying clean milk and milk products to whole milk users and to creameries.

For a little more light on the actual kind of material removed by the new apparatus and to a lesser degree by separators, the following list of substances removed can be given. It can be seen that it contains material from the milk itself as well as that falling in from the outside. The list contains bacteria, hair, dirt, moisture, butterfat, casein, ash, cow manure, mucus, albumen, milk sugar, leucocytes, red blood cells, tissue cells and colostrum cells. Several of these, of course, are proper constituents of good milk, but the larger part had better be removed.

CURE FOR COCKED ANKLES.

To the Editor: I have a four-year-old mare that has cocked ankles, and would like to know what treatment to give her. One neighbor said to blister her from the knee down, and another said to put shoes on with cork heels, and still another said to put corks at the toes. He said it would take a year or so to get the foot in natural position because she is young. Which of the three treatments is right?—E. T. B., Los Banos.

ANSWER BY DR. E. J. CREELY.

Cocked ankles are due to an inflammation of the tendons back of the ankle and a drawing up or contraction in consequence. Put on heel calks one inch, no toe, to rest and relieve the back tendons from strain.

Apply the following liniment at night, after which put on cold water swabs and let them remain all night. Soap liniment, 8 oz.; tincture iodine, 2 oz.; oil cedar, 4 oz.; sulphuric ether, 2 oz. Mix and apply once daily.

San Francisco Veterinary College.

THE MEAT FROM ALFALFA PROBLEM.

To the Editor: I would like to know if you have any data concerning the expense of keeping sheep in comparison to cows; in other words, I would like to know how many sheep one can keep the year round on an acre of alfalfa, considering that one can keep approximately one cow on an acre of alfalfa.

I would also like to have you advise me what the approximate income per acre would be on the sheep, taking into consideration their offspring and the wool received, for the year.

I might add that I have no pasture for the sheep other than alfalfa hay, which, during haying season, could be fed green. What I am trying to avoid is the necessity of keeping practically one man for each 30 cows, in order to do the milking and look after them, cutting down my labor bill; at the same time giving me an opportunity to make permanent improvements.—C. G. K., Stanislaus County.

This is the problem which has before been said to be pressing the alfalfa raiser for an answer. The dairy cow can't eat up all the alfalfa, and even when the cow would give the most net profit per acre under satisfactory conditions, there is still the problem of labor, one of the greatest problems in farming. The raising of beef cattle all the way through on intensively farmed land, perhaps all in alfalfa, finishing range cattle for the market or running sheep, are all seriously being considered.

There is this to be said about sheep on alfalfa. Sheep will bloat on alfalfa just as cows will, and they have to be handled properly. If well handled they thrive excellently on it. It will be most profitable and good for the sheep also to have a good part of their food something besides alfalfa pasture, for if there is an old rye or corn field to turn them on or a straw stack, it will be very cheap feed, and a good thing to go with the alfalfa. The sheep is supposed to be fine for the purpose of cleaning up odds and ends, though not living off odds and ends by any means, and since it has this value, it would be too bad to lose it by feeding only material raised especially for them.

For a rough estimate it can be said that the pasture that will support one dairy cow will keep ten ewes, though perhaps this estimate is rather high. You can probably turn off with good Shropshire ewes 120 to 130% of lambs per year, making up all losses during the year. At $3.50 or so per lamb, that would be perhaps $4.00 per ewe per year. You also can sell your old ewes for as much as the lambs needed to replace them would be worth, so there is nothing to take off on that score. The wool from ewe and lamb with good Shropshires is said to be sufficient to pay for their keep. It would bring $1.00 a year or thereabouts with average ewes. What the effect of the new tariff will be cannot be said, but this kind of wool will be affected much less than wool from range sheep. With everything managed properly the ewes should bring gross returns of perhaps $5.00 per head per year, a large amount being net profit. This whole subject is one that needs to be threshed out pretty thoroughly before California alfalfa men know just where they do stand on it.

On the side, if you find difficulty getting labor on the dairy, why not try some milking machines? They have been proved no longer an experiment, but apparatus of established merit.

A-1 Grade Second-Hand

PIPE

AND

SCREW CASING

Best Quality. Fully Guaranteed. Get our prices before buying. They will interest you.

GEO. P. ALEXANDER & CO.,

320 Market St., San Francisco.
Formerly conducting business under name of Alexander Pipe Co.

You need a new DE LAVAL Separator NOW

1st If you are still using some gravity or setting process of creaming—

Because your waste is greatest and quality of product poorest in mid-summer, when the milk supply is greatest.

Because time is of the greatest value on the farm at this season and the time and labor saving of the good separator counts for most.

Because the skim-milk is poorest without a separator in hot weather and often more harmful than helpful to calves and young stock.

Because the work of an improved De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

2nd If you have a very old De Laval or an inferior separator of any kind—

Because the losses of the poor separator from incomplete skimming and the tainted product of the difficult to clean and unsanitary separator mean most when the bulk of milk is greatest.

Because of the great economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

Because an improved De Laval separator is so much simpler and more easily handled and cared for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

Because the De Laval separator of today is just as superior to other separators as the best of other separators to gravity setting, and every feature of the De Laval superiority count for most during the hot mid-summer months.

These are all facts capable of prompt and easy demonstration, whether you have a poor separator or none at all. The new De Laval catalog, to be had for the asking, helps to make them plain. Every De Laval local agent stands eager to do so with a machine itself, with no obligation on your part to buy unless he does—and that to your own satisfaction.

WHY DELAY? Why put off so important a step as the use of the best cream separator, which you need more RIGHT NOW than at any other time?

De Laval Dairy Supply Company

165 Broadway NEW YORK | 101 Drum Street SAN FRANCISCO | 1016 Western Avenue SEATTLE

California State Fair

Sacramento, California

September 13-20, 1913

WILL BE THE GREATEST SHOW OF HIGH BRED LIVE STOCK EVER EXHIBITED ON THE PACIFIC COAST

Premium List has been enlarged so as to take care of a larger number of classes, and in some instances materially increased.

Especial attention is called to the fact that a liberal increase has been made in classifications and premiums on dairy products.

The Poultry and Pigeon Department has been revised and an increase has been made in premiums. In Pigeon Department no first premium will be less than $1.00; no second premium less than 50c.

A classification has been made for market culinary animals, providing premiums for rabbits and hares.

There has also been established boys' judging classes, and the sum of $400.00 set aside for premiums for boys who prove the best judges of live stock.

Premiums are provided for the best displays of Indian corn and spineless cactus.

Premium list is now being prepared. Send in your name now, to be placed on the mailing list.

ADDRESS, J. L. McCARTHY, SECRETARY,
State Agricultural Society,
Box 592, Sacramento, California.

A. L. SCOTT, President.

With the Livestock Men.

On our visits to the different breeding establishments we have often been told, by the breeders who advertise, that they were swamped with their correspondence.

At first glance this would seem to be a mighty nice state of affairs, when one has stock to sell, but the great trouble is that almost every enquirer wishes to know the breeding and price of the different individuals. This requires the breeder to spend a great deal of time writing lengthy letters, and in a good many cases nothing further is heard from it.

One breeder who seems to have found a way to overcome this trouble is Earl Armstrong, manager of The Oak Grove Dairy Farm, at Woodland, who has just issued a descriptive catalog of his Berkshires. This catalog contains the name and breeding of all herd boars and brood sows, and when a letter comes asking for the breeding of this or that litter of pigs, a note is written under the sire and dam of that litter, also price of young pigs, and a long letter is not necessary. Cuts are made of the herd boars which make it very attractive. While the cost of getting out such a catalog is quite a little, considering the time that is saved in correspondence and the fact that once it is in the hands of a prospective purchaser it is a standing advertisement, it is considered very reasonable. Mr. Armstrong seems to realize that the hog business can be successfully run, but that good, legitimate advertising is as necessary for the breeder as for other lines of business.

At the Portland Union Stock Yards last week the cattle market was steady to strong. Prices on beef were: Prime steers, $8 to $8.25, with bulk of steer sales at $7.75 to $8.10; best cows, $7.25 to $7.75; heifers, $7.25 to $7.50; choice bulls, $5.50 to $6; and choice light calves at $9.

The hog market was steady, with the bulk of light swine sales going for $9.15 and $9.30.

Sheep house business is reported to be dull. Prime killing ewes at $4, wethers at $4.25, and yearlings at $4.50 are extreme quotations in the mutton division.

The University Farm at Davis has recently added 12 head of pure-bred Holsteins to the already strong herd. With the showing California is making along stock lines, it is good to know that the University is keeping well up toward the head of the procession.

It is reported that cream receipts at the Tulare county creameries have fallen off considerably during the past month. Prices were slightly higher, ranging from 31 to 36c per pound to the dairymen. A comparison of figures for May and June shows a business of $8[illegible]289.35 in May and $79,833.47 during June.

A consignment of three carloads of dairy cattle to C. W. Hein & Co., proprietors of the Union Stock Yards at Portland, was shipped during the past week from Modesto. This stock was purchased by Col. Cy. Clark, and makes a total of five carloads shipped during the past five weeks.

The nine creameries in Kings county paid out an aggregate of $141,000 to the dairymen for deliveries made in June, being a slight decrease in receipts over last month. The Riverdale co-operative creamery paid the highest price, with an average of 31½ cents.

A new breeding establishment is promised Tulare county by Henry Huffsmith, who is an experienced cattle breeder from the southern part of the State. L. O. Putman and Herbert Fuller, also dairymen from the southern part of the State, accompanied him on the trip and expect to start dairies in the near future.

There is some talk of establishing a cow-testing association at Brawley, Imperial county. As the dairy industry grows in this State, dairymen are rapidly seeing the need of culling, and these associations are the most economical way of doing it so far found.

A new company called the Marin French Cheese Co., was recently formed at Petaluma with a capital stock of $75,000. Jefferson Thompson is at the head of the enterprise, which will manufacture foreign varieties of cheese.

The high prices offered for hay are said to be the cause of a great many sales being made of dairy cattle. We understand that prices around Modesto for good-grade cows were lower when offered at public auction this year than for some years past. As a great deal of the dairy stock being sold is going to

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Yours truly,

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Agts. California and Oregon,

Modesto, Cal.

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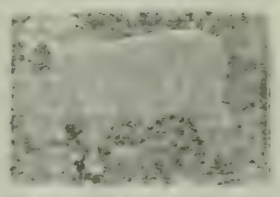

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Aralia De Kol.

Aralia De Kol, one year.....28,065.9 lbs. milk

Sadie De Kol Burke, six months.18,285.8 lbs. milk

Place at the head of your herd a bull strong in the blood of these cows.

We invite you to inspect our herd and will cheerfully give you further information and prices.

A. W. MORRIS & SONS,

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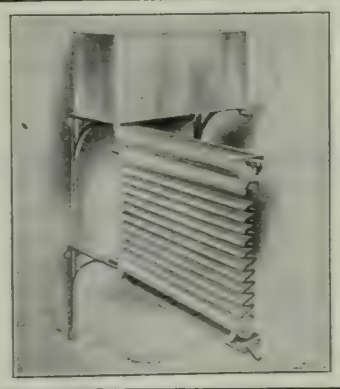

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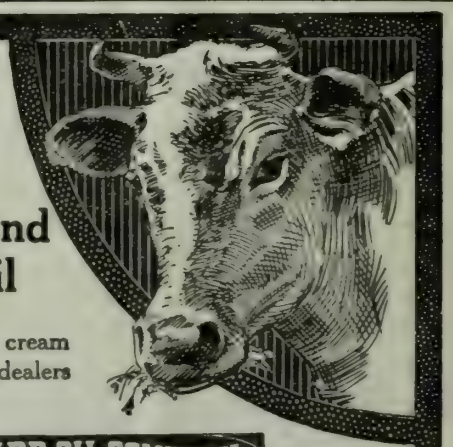

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other States, with a good hay crop next year it looks now as if cows would reach a new high level then.

George A. Sommerville, of New Zealand, is in this State at present looking over our prospective butter market providing the tariff is lowered. He states that butter men in his country are very hopeful of a large butter trade with this country.

The Anderson Co-operative Creamery, in Shasta county, expects to start its new plant by August 1. A. L. Doty has been engaged to operate the plant.

Cattlemen along the foothill districts of Calaveras, Amador, and Tuolumne counties, report that the grass in those districts will be poorer this fall than for some time past, due a great deal to the late rains.

Bishop Bros., of San Ramon, report that their shepherd, Ted Ballard, left England July 10 with 24 head of Shropshires purchased from Cavendish. Of the flock, 4 head were rams, and as this was the pick of Cavendish's flock, it should contain some grand individuals. They are expected to arrive here about September 1, by way of Quebec, Canada.

The dairy industry around Patterson, Stanislaus county, is rapidly coming into its own. During the month of July it was estimated that there were fully 500 cows being milked, and both the sweet cream and sour cream receipts were gaining rapidly.

The many friends of Professor Marshall, formerly head of the Animal Husbandry Department at Davis, will be interested in learning that he has been appointed to a similar position at the State University of Oregon.

The Tisdale Ranch, on Grand island, Sutter county, is now milking 60 cows with milking machines. It is the plan of P. J. Twilling, who is in charge, to eventually put the entire 2800 acres under irrigation.

At an auction sale in Tulare county, on the U. S. Smith ranch, last week, a string of grade dairy cattle averaged $50 per head. The highest price paid was $82. A number of hogs sold brought good prices.

In a communication which we have just received from T. J. Gilkerson, the Holstein breeder of Lemoore, Kings county, he states that his herd bull, Sir Segis Hengerveld De Kol, has been so badly injured by a neighbor's bull that he will not recover. This is to be regretted and will be a serious loss both to Mr. Gilkerson and to the breed as a whole in this State, as he was not only a good show bull, but was also the sire of a great many fine individuals to be found all over the State. The letter further states that a new herd bull will be purchased as soon as one of desired breeding and type can be found.

In every section one finds some one man who has bred more or less pure-bred stock for a great many years, and who, though known at home as a breeder, is not known by breeders in other sections. Such a man is H. V. Traynham, of Arbuckle, Colusa county, and while many discouraging obstacles have had to be overcome in the past, a good foundation has been laid for a pure-bred Jersey herd. The ranch is situated near the Sacramento river on land which in rainy winters usually overflows, and while this is not so serious a menace to grain-growers, it has worked a hardship on those who were endeavoring to do dairying on a large scale, and it was due to these floods that, while pure-bred Jerseys have been raised for a good many years, the herd could not be built up as high-priced stock and floodwaters 7 or 8 feet deep do not go well together.

At the time of our visit there were 12 head of registered females headed by a young bull purchased from Guy Miller, but we were informed that several hundred acres of higher land had recently been purchased near Williams, and that as soon as feed could be grown the herd would be moved to that location and also greatly increased in numbers.

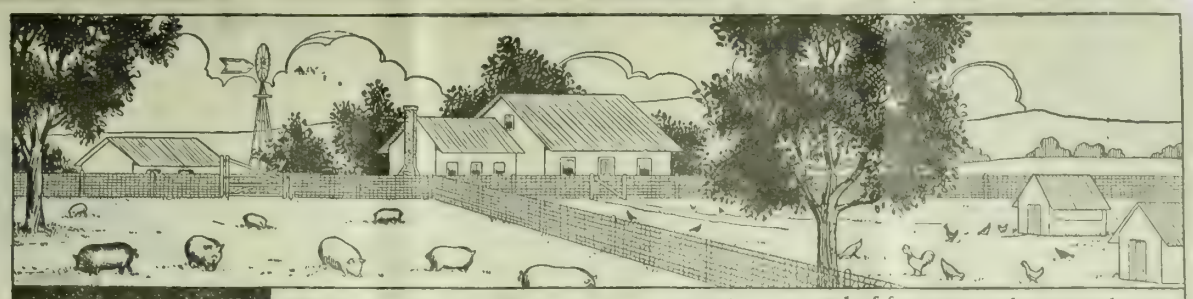
In connection with the Jersey cattle, horses, hogs, and sheep have also been bred, and neighboring ranches have always depended upon Mr. Traynham to supply them with good stock of all kinds.

From this time forward the object will be to confine the stock end to pure-bred Jersey cattle and Duroc-Jersey swine, and as Mr. Traynham is not only a good judge but also a lover of good stock, he will no doubt be heard of more in the future than in the past as a breeder. That Mr. Traynham may be called a success as a diversified farmer, can be seen from the fact that he farms 900 acres of land, a great deal of which is grain.

Ted Ballard, shepherd for Bishop Bros., is importing a few head of Shropshire sheep from England for Jim Marshall of Davis.

As the range conditions become harder for the sheepmen more such stock will likely be kept on the smaller ranches, as they are one of the most profitable by-products that a farmer can keep.

The Santa Rosa Republican states that N. H. Locke Co. is preparing to send two carloads of Jerseys to the district fair at that place this fall. Mr. Locke yearly makes a large circuit during the fair season, and this one will make the list still larger than last year.



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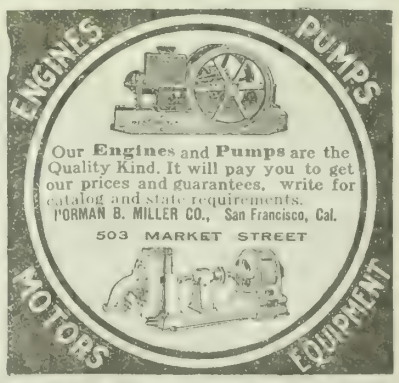

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RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

T. B. PURVINE offers for sale a few nice registered young Jersey bulls and bull calves out of fine cows. Petaluma, Cal R. F. D. 4, Box 195.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St. ,San Francisco.

CHAS. L. LEONARD, Jacinto, Glenn Co.—Registered Jersey service bulls, sired by Gerties Lad, Gerties Son, and Melias Fox, for sale.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

MINOR & THORNTON, Breeders of Reg. Holstein-Friesian cattle. Kearney Park P. O., Cal.

REGISTERED JERSEY CATTLE.—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

REGISTERED HOLSTEIN bull calves for sale. H. W. Hawkinson, Perris, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

WANTED—60 to 90 head beef heifers. Answer, giving location, age, breed and price asked. Rancho Dos Rios, Marysville, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SWINE.

REGISTERED DUROC JERSEY SWINE. Some extra good young boars for sale, ready for service. Best Eastern strains. Ed. E. Johnson, Turlock, Cal.

REGISTERED BERKSHIRE SWINE—Best Eastern strains; bred sows and spring pigs for sale. A. B. Humphrey, Mayhews, Sacramento Co., Cal.

REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. F. Daggs, Modesto, Cal.

350 BIG TYPE MULEFOOT HOGS for sale; they are the best for the Pacific Coast. John Dunlap, Williamsport, Ohio.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

FAIRVIEW STOCK FARM—Reg. Poland-China hogs. W. A. Young, Lodi.

CHAS. GOODMAN, breeder of High-Class Berkshire Swine. Williams, Cal.

E. C. RAND—Registered Berkshires. R. 3, Box 69, Santa Rosa, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

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PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three year old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

SHEEP.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

DETAILS OF SILO CONSTRUCTION.

To the Editor: Can you tell me how to plan the doors and foundation of a silo, especially the resaw type? Also, what machinery is needed to fill a silo, and what will the approximate cost of the same be?—Rancher, Lodi.

There are several ways of laying the foundation for a silo, in fact, in some sandy soil sections no foundation whatever is made. This is accomplished by digging a pit 4 or 5 feet in the ground and setting the studding on wooden plates. While this practice is somewhat cheaper than the making of a concrete foundation, it is not so lasting, and in the long run probably would not pay.

The practice of most silo builders is to line the bottom of the pit with a course of concrete, perhaps 4 inches thick. The studding may be placed on top of this concrete floor and then lined with resaw and building paper. The reason for using the pit is to lower the height of the silo from the ground level.

The continuous door system is very popular as it greatly facilitates the work of taking silage out to be fed. Instead of having openings at certain intervals, two 2x6's are put in as studding where the door is to be built. As there is no support to hold these in position, iron rods ¾ inches in diameter are used as binders, securely fastened with washers and nuts on both ends. On the side of these 2x6's a strip of 1x3 is run from bottom to top. This acts as a jamb for the doors, which are nothing more than 1x6 tongue and groove as long as the opening is wide, which is usually two feet. As the silo is filled these boards are put in, and when the emptying is done they are taken out one by one as their level is reached. This system overcomes lifting the ensilage from 1 to 5 feet as is necessary with doors at certain intervals.

As to machinery, a cutter and blower can be obtained for from $175 to $400, according to size. A gasoline engine or other power must be furnished, but both of these can usually be profitably used on dairies for other purposes. The corn is cut and blown into the silo all in one operation. The cutting of the corn in the field may be done with short handled hoes or a corn binder, according to how much you care to expend on the outfit.

As we have stated before in these columns, the most serious objection to silos in the past has been the machinery necessary to harvest and cut the crop, and about the only way in sight to overcome this is through co-operation with neighboring silo owners.

As to cost of the machinery any of our implement advertisers would be glad to send you their catalog and price list.

HELP THE SILO ALONG.

To the Editor: The Live Stock Department of the Panama-Pacific International Exposition will need from 300 to 500 tons of corn silage for use in the silos from which the cattle on exhibition and in the dairy tests will be fed. These silos will have to be filled from the 1914 crop.

Any farmer who is prepared to grow all or a part of this silage is requested to get in touch with my office. This is an opportunity for demonstrating the practicability of growing corn for silage in California. It will also teach a lesson about the advantage of silage. Alfalfa is used in a number of silos in California and gives satisfaction. Many feeders, however, contend that corn, which is a different basic ration, should be more extensively used.

I will be glad to hear from any of your readers as to their experience with corn raising, or with corn silage.

D. O. LIVELY,
Chief of the Department of Live Stock.

That is a chance to help the exposition, the live stock industry and one's pocket book all at the same time. They are going to fill with corn several silos of different types at the exposition, which incidentally shows what the management thinks of this excellent aid to stock raising and dairying, and it will give visitors the opportunity to see good stock methods as well as the good stock itself.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Jersey cattle, Poland-China hogs. Young stock for sale. Chas. N. Odell, Prop., Modesto, Cal.

BRAE BROOK COLLIE KENNELS—Line bred tri-colors. Working prize stock. R. F. D. 69, Santa Rosa, Cal.

JERSEY CATTLE, DUROC JERSEY SWINE. Mossdale Farm. J. E. Thorp, Stockton, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire Hogs and Jersey cattle.

Advantage of Having an Ideal Green Feed Silo

There is no waste to ensilage, and with proper care there should be no waste in the field.
The curing of Silage adds about double to its value over a crop harvested the usual way.
The acreage required to keep one cow fed on hay or other roughage will provide for two cows if the product is turned into ensilage.
Ten tons of ensilage can be stored in the same space as one ton of hay.
It furnishes a safe and easy way to store up against a dry season or a bad year.
Buy an **IDEAL GREEN FEED SILO NOW** and take advantage of the above facts.
Write for full information.

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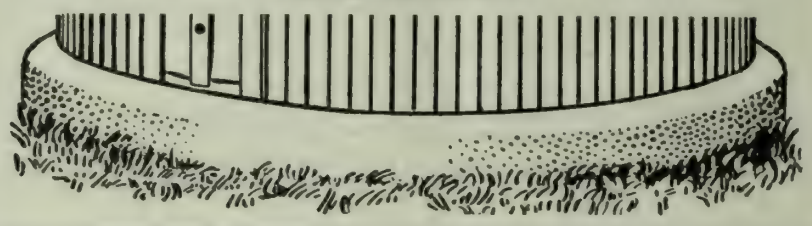

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Ideal Small Ranch

320 ACRES. Part choicest river-bottom soil; ample water for irrigation; part second-bench land for fruit and vines. Family orchard and good improvements.

Can divide to give 80 or 160 acres at half the price the big syndicates are offering inferior land.

Beautiful location; close to railroad; on mail and cream route.

Bargain for one wanting small producing ranch.

No agents!

LEO S. ROBINSON,

521 Examiner Bldg., San Francisco.

BUTTERMILK PAINT.

To the Editor: Something like a year ago I saw a recipe in the PRESS for a cheap barn paint, the ingredients being skimmed milk or buttermilk and paint-powder. I should be pleased to know the proportions, and if any other material should be used. M. D. W.

Biggs, Butte county.

In the issue of December 11, 1911, we ran a formula for "Buttermilk Paint," mixed in the following proportions: One gallon of buttermilk, three pounds of portland cement, and sufficient coloring matter to give the desired shade.

The paint should be applied soon after it is made, and stirred a great deal while being applied. It is said to dry in about six hours and to be a good preservative for fences, barns, and other outbuildings.

By taking advantage of our index system, many such points as this one are at hand for ready reference. An index can be found in the last issue of each volume, a volume ending the last week of June and of December.

Better Prices for Poultry Meat.

[Written for the PACIFIC RURAL PRESS by MRS. SUSAN SWAYSGOOD.]

With all kinds of meat ranging up so that ordinary people can only afford to buy the cheaper cuts, one would suppose the price of poultry would keep pace with it. The fact is the prices for poultry are no better now than when other meats were very much lower. Now there must be one or more reasons for this, and while my ideas on the subject may not all be correct, I do think some of them hit the mark, so I am going to give them for what they are worth.

Yesterday I asked the price of ham in the meat market, and was told for the best quality sliced 30 cents a pound. I bought what I call a ham shank, weighing found pounds, of which there will probably be three-fourths of a pound of bone, and paid $1 for the four pounds. At the feed store I saw some very nice-looking broilers of the small breeds and inquired the price they were paying for them and was told 18 cents. They would probably sell at retail for 25 cents, the same price paid for the ham-bone.

There can hardly be two opinions as to which of the two meats would give most nourishment to the body, nor can there be much doubt as to which would be the most palatable, all things considered; but from what I know of both kinds, and placing economy of time, labor and money in the scale, if I had to choose between the two, I should take the ham-bone.

And yet, mind you, I think—in fact I know—that pork is not a good summer meat for any one. But—and here is my first reason for choosing the ham-bone—I know it was well fed before it was killed and put on the market; consequently I know what to expect after I have boiled that bone a certain length of time. The second reason is that it is ready, or nearly so, as it only needs washing, to set on the fire and cook, and after it is cooked I can slice it up cold and with the addition of a little salad it will form the basis of an appetizing meal.

So much for the ham-bone. Now suppose I decide to invest my dollar in broilers. In the first place, I take the risk of whether they are well fed or just a bunch of feathers. That is one of the greatest drawbacks in buying poultry. These particular broilers were Leghorns, and if well fed, Leghorn broilers are plump and nice; but if poorly fed, they are just scraggy and by the time they are cooked there is not enough left to tell the story. So in the first place the buyer takes this risk; then the chickens must be killed and dressed and left to cool before they can be cooked, so that a dollar's worth of live chicken causes quite a little work before it is really ready to cook; then the cooking requires a little more work than boiling, but as most cooks do not object to that, it is not of so much importance.

In small chickens nearly all the meat is eatable, and there is very little waste except the bones, which do not weigh much; but in older fowls there is more waste and more work in preparing for the table, so the real value of the meat is offset in more ways than one.

Now my idea of improving the price of poultry is first to improve the quality. There are two ways of doing this, and the one that most anyone can do is to coop up all chickens intended for table use, and feed a good wholesome feed, letting them have enough room to exercise, but not run around to grow muscle. When they are as large as you want them, finish them on a milk ration. Milk-fed chickens are delicious, and what is more to the point, when they are fried the meat does not always run away to fat in the pan, as is the case with corn-fed chickens; the meat that looks plump on being cut up remains plump, and there is substance to it. Skim-milk or buttermilk will do, and if you will try it once you will never want to eat any other kind than milk-fed chicken.

It is surprising how quickly range cockerels, when cooped, will put on flesh, and the quality of flesh is all in the feeder's hands.

Here is a good ration for three weeks' feeding in coops—and that is as long as it pays to keep them up in real close quarters: For the first week give wheat bran and ground oats, coarse hulls sifted out, equal parts by measure, mixed into a rather thin gruel. The second week give ground oats alone or mixed with a low-grade flour with skim-milk. The third week add one tablespoonful of tallow for each bird fed and mix the gruel a little thicker. The birds should be kept in crates with slatted floors, so that the droppings are not any bother; the crates being up about a foot from the ground, everything can easily be kept clean. The troughs are arranged from the outside, the birds eating between the slats. They should be fed several times a day all they will clean up, and no solid food should be given after putting them in the fattening crates.

After eating milk-fed chicken, a person never wants any other if he can help it; there are no strings to break your teeth on, no dried-up little bits of skin; but nice, palatable, juicy, tender meat, no matter whether the chicken is young or old.

Any handy man can make the crates, and any farmer having one or two cows can make more money fattening chickens with his skim-milk than by feeding it to hogs.

CAPONIZING.—The next way to improve poultry meat is by caponizing all cockerels. There are some tools that have been so much improved over the old-fashioned ones that nearly anyone can do the work. And that it pays is a sure enough fact, not only in price and extra weight, but in peace on the ranch, for when there are a lot of young cockerels around it is a great deal of trouble to keep them from fighting and perhaps killing each other. Capons are so docile, and as they can be kept a year on range, or until full growth is attained, the fattening is easily done and we have a bird fit to set before a king. No hog meat, mutton or beef can touch a well-fed capon, no matter what price is paid or how choice the cut; and if we would just make up our minds to raise more capons and milk-fed chickens, I believe we can kill two birds with one stone—namely, increase the demand and the price for all kinds of table poultry.

In a letter of inquiry comes several questions that will take up the rest of our space. The first question is: "In the PACIFIC RURAL PRESS of June 21, you say you feed rolled oats to the little chicks. Do you mean the rolled or the cracked oats? Can chicks four or six weeks old eat the rolled oats? How early do you begin feeding it, and how?"

Evidently this lady did not get my meaning, and she is thinking of the kind of rolled oats like barley with the hulls on. The oats I feed are such as we use for table or breakfast food, and I feed it from the first, alternately with other feeds. As to how long, that must depend on what we want to spend on raising our chicks. I feed it just as long as my pocket will stand it, then quit sometimes I feed as chick feed, just throw it down and let them pick it up; sometimes I mix half bran and rolled oats and moisten with milk or water and feed as a moist mash; again, I put it in the dry mash, and they always single the oats out first.

"Do you feed your laying hens any corn at night in the summer, and how much for 20 hens?" No, I do not feed any corn at any time of the day in summer, nor do I think it is wise to feed corn in our climate. The lady says: "I am now feeding wheat, oats, and rolled barley, also keep a can of bran and one of Coulson's egg food in the chicken yard all the time. Do you consider this a proper ration?"

Yes, I think your hens are fairly well fed, especially if they get a little green feed once a day.

"I have about 60 little chicks. In selling them, which pays the best; to sell as broilers at 2 pounds, or to keep them until they reach fryer size?"

The season being well along now, I would prefer to sell as broilers, because if you wait until they reach the fryer size there will be so many more on the market that the price will be down. Here in Pomona they are paying 18 cents for broilers, so a two-pound broiler will bring at least 36 cents, and if you feed until they get fryer size you will probably get 50 cents each for all your extra work and feed; so it is better to get that class of stock to market as soon as possible.

One of our subscribers sends me a plan for perching chickens that is somewhat novel. As it may be useful, I will give you a description of it in next week's RURAL PRESS, and I take this opportunity to thank Mr. Whitney, the sender of it, assuring him that his idea shall have a hearing.

The hot weather has been a little hard on me, and I have somehow neglected answering one or two questions; but I hope to catch up now that it is cooler.

POULTRY.

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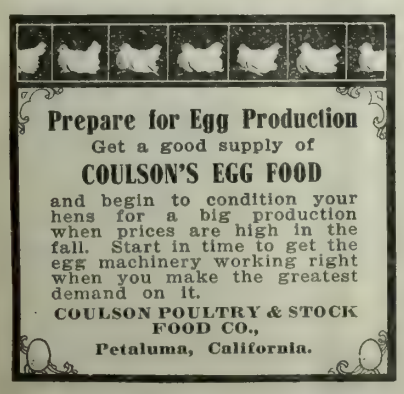

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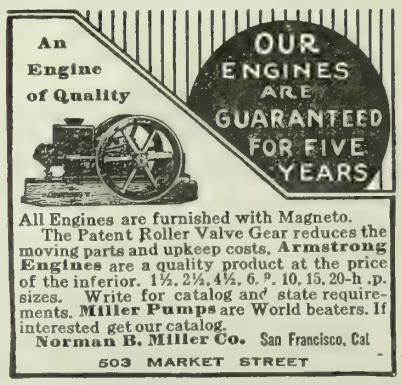

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POULTRY DEPARTMENT

The Home Circle.

Johnson's Fortune.

"I've done my best, mother," Farmer Hobbs said, coming in hot and tired from the hay-field. "That there dratted machine won't work, and ef I am to save my hay, I'll have to take that intrust money and buy a new machine."

"I think you'd better not, father," Mrs. Hobbs answered, in mild alarm. "I don't know where you're going to get any more, and Johnson is powerful clost about gettin' the money on time. I'd be afeared to let it run over a minute."

"Well, but, Lucindy, the hay's wuth more'n the intrust, and you know they's no takin' the stock through the winter without it. The cattle might kinder rub along, but the horses is jist plum ableeged to have their timothy, and my timothy is as fine a piece as you ever sot eyes on."

"Suppose you try again," Mrs. Hobbs suggested, helping her husband to a luscious quarter of raspberry pie. "I'll go out with you and help onchoke her, and we'll use plenty of ile, and mebbe you can rub through jest this onct."

"Well, I'll try, Lucindy; I hain't no hopes, but I would like to save that intrust money."

Mrs. Hobbs stayed in the field till five o'clock, and the hay was cut with few delays. The girls brought out the supper, which was eaten with much relish in the hay-field. The horses being watered and fed, the work went on by the big harvest moon, and at 10 o'clock the hay from the "big medder" was in the stacks.

A few days after, Jim Johnson came out to see if the interest money was ready. He tied his horse under a tree and started through the meadow to see Mr. Hobbs, who was fencing his ricks at the other side.

"Moses and the bullrushes! What's that?" he asked, gazing at glinty, blue reflections floating on pools of water standing everywhere, for it had rained heavily the night before. "Oil, and no mistake!" he went on, after dipping his finger into a puddle and testing it carefully with his nose.

It was only the day before that the papers had contained an account of some new oilfields found not above twenty miles away; an old partner of Jim's had been the first to invest, and was consequently fabulously rich.

Johnson carefully rubbed his fingers on his pocket handkerchief, stowed the latter in a deep pocket and hastened across the field, his face pale and his eyes glittering very unpleasantly. He tried to greet the farmer with his accustomed familiarity, but his words came by jerks and in gusts, and his throat became so dry that he could scarcely articulate.

"What's the matter? Hain't you well? Mr. Hobbs asked, suspending his work to gaze curiously at his visitor. "You look taller-colored as the dead, an' your eyes is like burnt holes in a blanket."

"No, thank you, not at all," Johnson replied at random. "I'm quite well, except husky, sore throat—are you well? And the family?"

"Pretty fair—we've got a good deal of health mixed up amongst us—you known they's twelve all told."

"Yes, a large, interesting family—want to sell the farm?"

He tried to make the question less eager, but he could not quiet the tremor in his voice and he was in mortal dread lest Mr. Hobbs should have some reason to cross the field and see the oil, when his "cake would be dough," as he mentally expressed it.

"No," Mr. Hobbs replied shortly, and went on with his work.

"I'll give you a good price for it—I want it for a combination shoe factory. Set a figger."

"Well, twelve thousand—a thousand apiece," said Mr. Hobbs jokingly; the farm was not worth more than a third of that sum.

"I'll take it," with a gasp. "Here's fifty to bind the bargain, and I'll fill out a check for the balance right here."

He did so, and handed the paper to Mr. Hobbs, who kept his countenance and received it with perfect gravity. Privately he was convinced that Johnson was crazy.

"Come to the house and sign the contract for the deed."

"All right."

Mr. and Mrs. Hobbs accompanied Johnson to town, and were thunderstruck when they learned that the sale was real, and that they had twelve thousand dollars in the bank.

"Sense Johnson hain't crazy," Hobbs began as soon as he was clear of the town, "why' they's somethin' in the wind. It may be a shoe factory, but I don't believe it. I wonder ef they've found gold?"

"It don't make no sort o' defference to us, father," Mrs. Hobbs answered. She was afraid that her husband would take alarm and want to "rue back," as she expressed it. "No, it don't make a grain o' defference to us, an' we've got enough for the place ef they find dimints. I never did like it, an' I don't keer how soon we git away. Let's buy back our six acres on the edge of Cloverdale. We can git it for three thousand, an' then you'll have nine thousand to put out at intrust."

"Yes, mother,"

"And we kin git little Jim his cornet and send him off to be learnt to play."

"You can do jist as you please, mother. I'm rich enough now, I reckon, to do as I like, and I hope I won't never want to do nothin' very bad."

"That's somethin' you never did do, father," dutifully replied his wife, "and I don't believe bein' rich is a-goin' to change you much. If it would I'd want somethin' to come along and take the money away from us, because it can't never pay to give up doin' good."

As soon as the transfer was made and the deed recorded, Johnson sent the following telegram to his whilom partner:

"Come on—bring all your loose cash—oil in abundance."

The cash was sent with instructions to buy adjoining farms on option of thirty days; the oil man would come on later and bring an expert.

The farms were bargained for at ridiculously low figures, and then Johnson invited his friends out to see his "find."

"I tell you, boys," he said, as he rode up and tied his horse to the meadow fence, "the whole earth is jist a-soakin' with it, and it's jist burstin' out of the ground. You see, this country has never had any oil taken out of it," he went on glibly, "and as it is constantly generating it has become so chock full that the ground can't hold it and it's compelled to come out. You'd be astonished to see how it is actually boiling up."

"It must be wasting if it is in that condition," some one remarked.

"What's a waste of a few millions o' barrels?" scornfully retorted Johnson.

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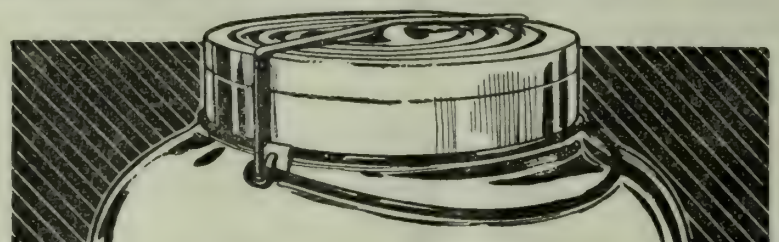

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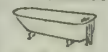
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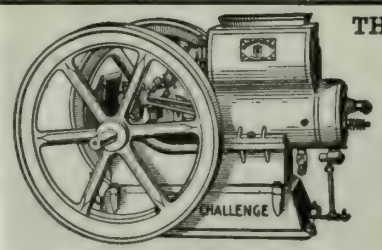

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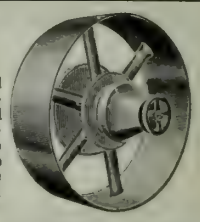
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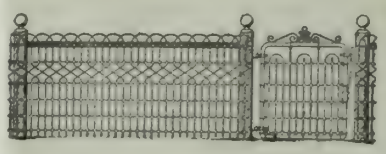

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There's enough left for me and my family and all my poor relations."

By this time others, having heard the news, had arrived at the farm, and quite a crowd had gathered when the partner with the expert drove up, followed by Mr. Hobbs.

"Just wait until you examine these blue patches," Johnson said to the two men after they had alighted from their buggy. "Now tell me if you ever saw a surer indication of oil?"

The expert gave a glance over the field, took a quick survey of the conformation of the country, and opened his lips to speak; but before he could articulate a word, Mr. Hobbs broke into the conversation with a remark that sent the cold chills down Johnson's spine.

"And is it them blue patches that indicate ile?" he asked with a glance half pitying, half contemptuous. "That's a fact, for I used mor'n two gallon on my ole mowin'-machine, a-tryin' to git through the season without buyin' a new one."

"Let this be a lesson to you, sir," said Johnson's partner.

"All the lesson I git out of it," again put in Mr. Hobbs, "is that when you are a-cuttin' hay, use plenty of ile."

"It's a swindle!" Johnson broke out, livid with rage. "And I'll land you in the pen before this is over."

"Don't talk to me about swindling," Mr. Hobbs began, advancing upon Johnson, who had retreated to his buggy. "Who was it swindled the Widow Robinson out of her property and drove her to commit suicide? Who was it that swindled the people out of their taxes and barely missed the pen? Who was it that swindled—"

Johnson gave his horse a lash with the whip and drove rapidly away.

"I didn't know nothin' about this ile business until this mornin'," Mr. Hobbs explained to the people present. "I knowed they was somethin' up, but I had no idy what it was, for I supposed every blamed fool in the country would know machine-ile on a medder after a rain."—Waverly.

Sitting Up Straight.

Grown people and children alike are inclined to fall into the very bad habit of sliding down into a chair, and sitting for hours with the spine bent almost in a half circle.

That this is injurious, thousands of people who indulge in it never so much as dream, but that it is the cause of many serious ills, those who have investigated the subject are well aware. The continual strain upon one side of the spinal column, with the corresponding compressions on the other, gives rise to nervous difficulties and affections of the brain. Dizziness, nausea and blind spells are not infrequently the result of this practice. While the strictly upright position is undoubtedly the most healthful, it seems rather hard to persuade the young and indolent to maintain it.

Lazy people and those who love luxury have a habit of "slumping," so to speak, into their chairs and remaining in a semi-recumbent position with the spine as nearly telescoped as may be. That portion of the human anatomy generally known as the backbone was intended to be worn in an upright position, and the constant pressure of the sections of the vertebrae upon each other is productive of various ills.

Children should be taught to sit erect, especially if they are growing rapidly. When tired or in a position for rest, let them lie down and entirely remove the strain from the muscles of the back. If the youngsters who suffer from dizziness or headache are carefully observed, it will be frequently noticed that their position is faulty. The curved form of the spine results in the pulling of the muscles at the back of the neck, and the difficulty is quite certain to be removed by correcting the habit of sitting.—New York Ledger.

Smiles.

A teacher had been telling her class that once on a time worms had become so numerous that they destroyed the crops, and it was necessary to import the English sparrow to exterminate them; that the sparrows multiplied very fast, and they were fast driving away our native birds, and doing as much harm as the worms.

Johnny was apparently very inattentive and the teacher, thinking to catch him napping, asked, "Johnny, which is worse to have worms or sparrows?"

Johnny hesitated a minute, and then replied, "I dunno, I never had sparrows."

Jones answered an advertisement and sent $1 for four pairs of socks. When they arrived, Jones looked them over and then wrote the advertiser:

"Socks received. The patterns are vile. I wouldn't be seen on the streets with them on."

Back came the answer:

"What are you kicking about? Didn't we guarantee that you would not wear them out?"

Tommy—"Pop, what is a diplomat?"

Tommy's pop—"A diplomat, my son, is a man who remembers a woman's birthday, but forgets her age."

"Father, did mother accept you the first time you proposed to her?"

"Yes, my dear; but since then any proposal that I have ever made she has scornfully rejected."

"I am a self-made man, I am."

"Well, I think there is one thing you needn't worry about."

"What is that?"

"Taking out a patent."

"Here's something queer," said the dentist. "You say this tooth has never been worked on before, but I find small flakes of gold on my instrument." "I think you have struck my back collar button," replied the victim.

"'Lo, Jim! Fishin'?"

"Naw; drownin' worms."

Pet—"Do you think I'd look better if I had my beard shaved off?"

Dearest—"Of course not; just when your face is almost covered?"

"Bill's going to sue the company for damages."

"Why, what did they do to him?"

"They blew the quittin' whistle when 'e was carrin' a heavy piece of iron, and 'e dropt it on 'is foot."

Uncle Ned—"Why, Johnnie, you don't swear, do you?"

Johnnie—"No, I don't swear, but I know all the words."

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THE MARKETS.

San Francisco, July 23, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Outside markets are still weakening, and considerable wheat has arrived lately, spot offerings being rather large. With little interest among buyers, prices continue to decline, practically everything being quoted lower than last week.

California Club, ctl	$1.52½@1.55
Forty-fold	1.55 @1.60
Northern Club	1.52½@1.55
Northern Bluestem	1.72½@1.77½
Northern Red	1.55 @1.70

BARLEY.

Prices for spot feed are within the old range, and considerable grain is being sold to arrive at about the same figures. There is a firmer tendency than last week, with a gradually increasing demand, and considerable business is expected within the next few weeks.

Brewing and Shipping	Nominal
Choice Feed, per ctl	$1.30 @1.35
Common Feed	1.27½@1.30

OATS.

All grades are very quiet at present, with little demand in the local market, and while supplies here are not excessive there is an easy feeling as to prices.

Red Feed	$1.65 @1.85
Seed	Nominal
Gray	Nominal
White	1.55 @1.60

CORN.

Kaffir corn has again been marked up a little, with light offerings here and considerable demand in the country. Otherwise prices stand as last quoted, with no activity in any line.

Cal. Yellow	$1.55 @1.60
Eastern Yellow	1.50 @1.55
Eastern White	Nominal
Kaffir	1.60 @1.65
Egyptian	1.70 @1.75

RYE.

Prices remain nominally at the old quotations, with very little demand and only moderate offerings.

Rye, per ctl	$1.45 @1.50

BEANS.

Nothing new has developed in the bean situation this week, all descriptions remaining at the former quotations. There is perhaps a little less firmness in some varieties, particularly limas and small whites, but spot supplies are getting into very narrow compass, and no quotable decline is expected. Business is on about the same small scale as for several weeks past, with a steady run of small inquiries, but no large single shipments.

Bayos, per ctl	$3.15 @3.25
Blackeyes	3.15 @3.35
Cranberry Beans	4.70 @5.00
Horse Beans	1.90 @2.15
Small Whites	5.50 @5.70
Large Whites	4.50 @4.75
Limas	5.75 @5.90
Pea	Nominal
Pink	3.00 @3.20
Red Kidneys	3.40 @3.60
Mexican Red	3.75 @3.80

SEEDS.

Quotations are almost entirely nominal on all lines, as there is practically no new stock coming in, and there is no demand of any consequence at this season.

Alfalfa	12½@ 14c
Broomcorn seed, per ton	$27.00@28.00
Brown Mustard, per lb	3¾c
Canary	6 @ 6½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

The market shows no particular change, the demand keeping up on about the former scale, with the same prices as for some time past.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.60 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Local offerings show a further increase this week, and the heavy tonnage coming in tends to depress the market. There is no noticeable decline in prices, but receivers find it very difficult to dispose of the arrivals to good advantage, as buyers continue to hold off in expectation of lower prices in the near future. Country markets show a little more easiness, as holders are beginning to realize that prices are unlikely to advance during the summer. Buying for storage has been limited, owing to the scarcity of money as well as the high prices asked. In sections where light crops prevail, hay has been held above parity with other markets, and little has been sold in such districts, as buyers have been able to meet their needs elsewhere at lower figures. There is now a little more disposition to sell, but it is not believed that any large amount can be marketed at the prices asked. Alfalfa is turning out well, and offerings are increasing, though the demand keeps up in good shape.

No. 1 Wheat, or Wheat and Oat	$17.50@19.00
do No. 2	15.00@17.00
Lower grades	14.00@15.00
Tame Oats	15.50@19.00
Wild Oats	14.00@16.00
Alfalfa	12.50@14.00
Stock Hay	9.00@11.00
Straw, per bale	60@ 95c

FEEDSTUFFS.

Rolled barley is a little steadier than last week, but oats are weak. Prices, however, show no quotable change.

Alfalfa Meal, per ton	$20.00@21.00
Bran, per ton	27.00@28.00
Oilcake Meal	32.50@33.00
Cocoanut Cake or Meal	25.00@26.00
Cracked Corn	34.00@35.00
Middlings	34.00@36.00
Rolled Barley	28.00@29.00
Rolled Oats	34.00@35.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Onions were marked up a few days ago, but the advance checked the shipping demand somewhat, and the market is now easy. String beans also have advanced sharply, and green peas are a little higher, arrivals of both being light, though green lima beans are lower. Otherwise most lines of summer vegetables are plentiful and easy. Green corn from Alameda county is offered in large quantities, and prices are somewhat lower than last week, while tomatoes have dropped abruptly. River stock in large boxes is quoted around 85c., shutting off the demand for Merced stock, and a few boxes of Bay tomatoes are in the market. Cucumbers and summer squash are plentiful and cheap, being hard to keep cleaned up, and okra and eggplant are also lower.

Onions: fancy, ctl	$ 1.15@ 1.25
New Yellow, River, sack	90c@ 1.00
Garlic, per lb	3@ 4c
Cucumbers, per box	90c@ 1.15
Cabbage, per ctl	1.00
Carrots, per sack	1.25
Cauliflower, per doz	40@ 50c
Green Peppers, box	50@ 65c
Green Peas, lb	2@ 4c
String Beans, lb	3@ 6c
Summer Squash, lug box	1.00@ 1.25
Green Corn, choice, sack	1.25@ 2.00
Okra, box	65@ 75c
Tomatoes, Merced, box	15@ 25c
Eggplant, box	75c@ 1.00
Lima Beans, lb	3@ 4c

POTATOES.

Old stock is about out of the market, and new potatoes have declined from last week's prices, the demand being light, with local supplies piling up. Sweet potatoes are in better demand and firmly held.

New River Whites	70c@ 1.00
San Mateo, box	60@ 75c
Sweet Potatoes, per lb	5@ 6c

Dairy Produce.

POULTRY.

Eastern stock is still scarce, and prices are held about the same as last week, but the market is a little easier. California stock is arriving more freely, and while there is a fair demand it is not cleaning up as rapidly as last week.

Large Broilers, per lb	23 @24 c
Small Broilers, per lb	23 @24 c
Fryers, per lb	23 @25 c
Hens, extra, per lb	15 @16 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	15 @16 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	24 @25 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.75@ 2.25
Ducks, doz	4.50@ 6.00
Turkeys, live	20 c

BUTTER.

Butter is again advancing, and this week reached the highest level this season. Supplies are coming in fairly well, but there is considerable buying for Los Angeles, which keeps this market fairly well cleaned up.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	29	29½	29½	29½	30	30
Firsts	28	28	28	28½	28½	28½

EGGS.

Strictly extra fresh stock has been quite scarce for the last few days, and this grade reached 29c. the first of the week, afterward dropping ½c on somewhat larger receipts. The lower grades are in fair supply, but firsts and pullets also show some advance.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	25½	26½	27½	29	28½	28½
Firsts	23½	24	25	25	25	25
Selected Pullets	22	23	23	24	23½	23½

CHEESE.

Fancy flats are a little easier, being steady at ½c decline, while Y. A.'s have been marked up. Monterey cheese is steady at the old price.

Fancy California Flats, per lb	15½c
New Young Americas, fancy	18 c
Monterey or Jack Cheese	14@15c

Deciduous Fruit.

Cherries are about out of the market. Prices on most summer fruits are pretty well maintained, notwithstanding the fact that the demand was curtailed by this week's showers. The best blackberries are higher, while huckleberries are lower, other lines being quoted at about the old range. A good deal of the stock, however, has been in poor condition and sold at irregular prices. Serious damage to apples is reported in the Sebastopol district from the heat, and high prices are demanded in the shipping trade, although supplies here are ample. Bartlett pears are offered more freely, and first-class stock is bringing good prices, though wrapped stock is hardly as strong as unwrapped. Most of the apricots here are selling in lug boxes, and prices are fairly well maintained, though there is a good deal of poor stock that is hard to sell. Peaches also show rather poor quality for the most part, boxed stock bringing lower prices, though some attractive fruit in baskets is selling at 75c to $1 or more. Prices are well maintained on German and Tragedy prunes, and some other plums of good quality sell up to $1 per crate. Figs have been rather scarce, but are now arriving well from points north of the bay, and sell off readily at good prices. Cantaloupes are coming in from many points, and considerable stock is held from day to day, with prices somewhat lower. Watermelons, though plentiful, are in good demand, with an advance over last week. Malaga grapes are somewhat higher, and these, as well as the seedless variety, find a good demand.

Loganberries, chest	$ 5.00@ 7.00
Blackberries, chest	3.00@ 4.50
Huckleberries, lb.	15@ 20c
Raspberries, chest	4.50@ 7.00
Strawberries:	
Longworth, chest	5.00@ 8.00
Other varieties, chest	3.00@ 7.00
Apples:	
New Gravensteins, box	1.25@ 1.75
Astrachans	1.00@ 1.60
Pears, Bartlett, No. 1, box	1.40@ 1.50
do No. 2	50c@ 1.00
Apricots, small lug	65@ 90c
do large lug	1.00@ 1.40
Peaches, box	50@ 75c
Plums, crate	75c@ 1.00
German and Tragedy Prunes	1.00@ 1.15
Figs, drawer	1.00@ 1.25
Cantaloupes, large crate	1.00@ 1.75
Watermelons, per dozen	1.25@ 2.50
Grapes, Seedless, crate	1.75@ 2.00
Malaga	1.50@ 1.75
Fontainbleau	75c@ 1.00

Dried Fruits.

Dried fruit business in general is picking up a little, though there is nothing new in prices aside from a slightly lower inside quotation on raisins, some of which are being picked up by packers at 3¼c. The new company, however, seems to have the situation pretty well in hand, and an active movement is expected before long. The crop has apparently suffered some damage from the hot weather. Apples are quiet and unchanged, with a slightly firmer tendency owing to reports of short crops here and in the East, although a large hold-over in the East prevents any immediate advance. Apricots are again finding some demand, mainly in the export trade, and considerable buying of prunes for export is reported. Local packers report quite a heavy movement in the larger sizes of prunes. The supply of 1912 crop has been reduced to very small proportions. Peaches are pretty firmly held in the country, but there is no heavy demand, the large hold-over being against any large demand for the new crop. The New York Journal of Commerce says: "Spot apricots are quiet but steady. Nothing is being done in new crop peaches for shipment from the Coast so far as reported by local representatives of packers, but the tone of the market is firm and sellers are not inclined to make concessions from previously quoted prices. Spot peaches also are quiet but steady. The situation in California prunes has not changed, advices from the Coast reflecting a firm feeling among both growers and packers because of the recent unfavorable crop prospects due to hot weather. The general f.o.b. quotation on Santa Claras is 4⅝c f.o.b., four-size bulk basis, for 40s to 60s in equal quantities, and 4½c on Sonomas, though it was reported that a car or two had been confirmed on a 4⅛c f.o.b. bulk basis for the four sizes. Buyers at this end are holding off, believing that the effort making by Coast operators to advance prices is not warranted by actual conditions. No buying is apparent in raisins by the local jobbing trade, but there is no pressure to sell, and prices are maintained."

Evap. Apples, 1912 crop, per lb	5 @ 6 c
Apricots, 1913	10 @12 c
Figs: White, 1913	3 @ 3½c
Black, 1913	2½@ 3 c
Calimyrna, 1913	4½c
Prunes, 4-size basis, 1912	3 @ 3¾c
do 1913	4 @ 4½c
Peaches, 1912	3½@ 4½c
do 1913	4½c
Pears, 1913	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912	3 c
do 1913	3¼@ 3½c
Thompson's Seedless, 1912	4½c
do 1913	4 c
Seedless Sultanas, 1912	3½c
do 1913	3 c

Citrus Fruits.

Prices for valencia oranges in the Eastern auction markets are lower than last week, but in California they are commanding $4.25 to $5 per box f.o.b. for best grades.

At New York, July 21st, the auction prices for valencias ranged from $6.50 down to as low as $1.90 per box. Of course, the very low prices were for frosted or decayed fruit. The average sales were around $4.50 and $5. Other auction points showed about the same prices as the above for oranges.

Lemons are still high, ranging on the several Eastern auctions on Monday, the 21st, from $6.90 down to $4.20. Shipments during the past week from this State were very light, averaging about seven cars per day.

Guesses on the new citrus crop in southern California place it at 65% of the normal, which will be very good considering the setback the trees suffered last winter.

The supply of limes at San Francisco was quickly cleaned up, and lemonettes still find a good demand at the old prices, though lemons are a little easier. The demand for valencia oranges locally is about normal for this season, values being steady at the former level.

Oranges, per box—	
Valencia	$4.50@ 5.50
Grapefruit, seedless	2.50@ 5.00
Lemons: Fancy	6.00@ 8.50
Lemonettes	6.00@ 7.00

Nuts, Honey, Hops, Etc.

NUTS.

Spot supplies are very light, and prices nominal, though there is some figuring on the new crop, and new prices should be out before long. There has been some talk of a price of 18c for almonds, and a contract for new walnuts at Hemet is reported at about 12¼c.

Almonds—	
Nonpareils	17½c
I X L	16½c
Drakes	12½c
Languedoc	11½c
Hardshells	8 c
Walnuts, 1912 crop—	
Softshell No. 1	16 @16½c
Ne Plus Ultra	15½c
Hardshell No. 1	15 @15½c
No. 2	10½c
Budded	17 c

HONEY.

New stock is coming in a little more freely, but the better grades still find a ready demand, all arrivals being quickly

cleaned up at the old prices. Lower grades are dull, but there is no pressure to sell.

Comb, white, new	15	@17 c
Amber	11	@12 c
Dark	9	@10 c
Extracted, white	8	@10 c
Amber	6½	@ 7 c
Off Grades	5	@ 6 c

BEESWAX.

Prices are quoted a little higher by local dealers, but there is hardly enough business to establish values definitely, both demand and supply being limited.

Light	30	@32 c
Dark	28	@30 c

HOPS.

A good-sized sale of old hops is reported at Sacramento at 15c. The supply of 1912 stock is practically cleaned up. A little business is being done in the new crop at the range quoted, but so far there has been no great activity.

1912 crop	15	@20 c
1913 contracts	15	@17½c

Live Stock.

No quotable change is noted, most descriptions remaining steady to firm as for several weeks past.

Grass-fed Cattle—		
Steers: No. 1	6¾	@ 7 c
No. 2	6½	@ 6¾c
Cows and Heifers: No. 1	5¾	@ 6 c
No. 2	5¼	@ 5½c
Bulls and Stags	2½	@ 4½c
Calves: Light	6¾	@ 7 c
Medium	6¼	@ 6½c
Heavy	5	@ 5½c
Hogs: Grain-fed, heavy	7¼	@ 7½c
150 to 250 lbs	7½	@ 7¾c
100 to 150 lbs	7¼	@ 7½c
Prime Wethers	4½	@ 4¾c
Ewes	3¼	@ 3½c
Lambs: Suckling	5½	@ 6 c

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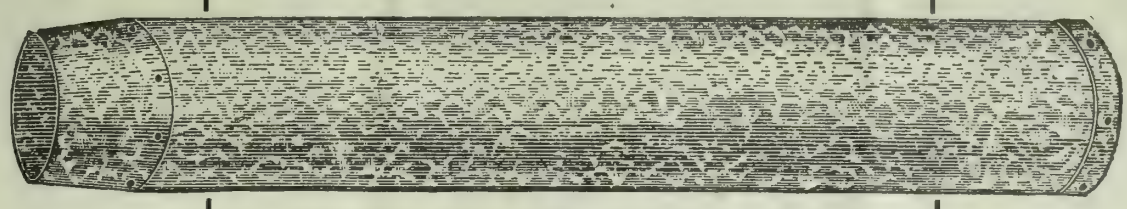

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Steers	12	@12¼c
Heifers	11	@11½c
Veal, large	10	@11 c
Small	12½	@13½c
Mutton: Wethers	10½	@11 c
Ewes	9	@ 9½c
Suckling Lambs	11½	@12 c
Dressed Hogs		12½c

WOOL.

Wool is still generally neglected, and in most districts the spring clip remains in the hands of growers, values being uncertain.

Spring clip:		
Southern mountain, free	8	@11 c
Northern, year's staple	13	@14 c
Humboldt, year's staple	18	@19 c
do short	13	@14 c

HIDES.

Offerings of hides in the country are very light, but buyers appear to be in no hurry for supplies and the market stands at the former level of values.

Heavy Steers, over 56 lbs.		14 c
Medium		13 c
Light Steers, under 48 lbs.	12	@13 c
Heavy Cows, over 50 lbs.	12	@13 c
Light Cows, 30 to 50 lbs.		13½c
Kip	14	@15½c
Veal	17	@18½c
Calf	17	@18½c
Dry—		
Dry Hides	24	@25 c
Dry Kip, 10 to 15	24	@25 c
Dry Veal, 5 to 10		29 c
Dry Calf, 7 down		29 c
Horse Hides—		
Salt: Large		$2.25
Medium		1.75
Small		75c
Colts		25@ 50c
Dry		75c@ 2.00

HORSES.

Retail business has improved a little of late, with a fair amount of inquiry for drafters and all-purpose horses of desirable types. This has brought in several good-sized shipments of horses for auction from Utah and California points, which were sold during the week. A good many horses are also being sold by teaming and draying concerns, but only young horses, ready to go to work, receive much interest.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

NEW BOOKS RECEIVED

Three new books from the Orange Judd company were received this week, all of which are of interest to farmers.

FARM MANURES.—By Charles E. Thorne, director of the Ohio Agricultural Experiment Station; illustrated, 242 pages, cloth, price $1.50 net. This book discusses the origin of the soil, composition of the plant, feeding of the plant; composition, production, value, waste and preservation of manure; methods of applying and where to use it. There are also chapters on green manuring and planning farm management for fertility maintenance.

CALL OF THE LAND.—By E. Benjamin Andrews, chancellor emeritus of the University of Nebraska; illustrated, cloth, 385 pages, price $1.50 net. The table of contents by chapters covers the farmstead beautiful, national importance of the rural interest, passing of Federal pastures, sunshine farming, health as a duty, farmers vacations, beef supply, industrial education, the rising generation, crusade of the country school, taxation and land, Socialist and farming interests, public interests, medicine and morals.

A CATECHISM OF AGRICULTURE.—By Thomas Clark Atkeson, professor of animal industry, West Virginia University; illustrated, 90 pages, cloth, price 50 cents net. This little book covers in brief the whole range of agricultural practice, including agriculture defined, soil management, plant, farm crop, animal, dairy and farm management. It is in the form of questions and answers and contains a great deal of information in a small space.

For any or all of the above books write to the Orange Judd company, 315 Fourth avenue, New York City.

A CHANGE OF NAME

The business of the Asiatic Products company, that of selling high-grade teas direct to the public through the Parcel Post at a reasonable price, will be conducted henceforth in the United States under the name of The Anglo-Ceylon company, with offices at 244 California St., San Francisco. The reason for the change is that the name Asiatic Products company conveyed the impression to some people that the company was composed of Asiatics, while as a matter of fact the personnel of the company is composed of British and Americans who have made tea-tasting and tea-blending a life study.

A trial order for "Dalmoy Blend," the most delicious tea the world produces, will be appreciated both by the company and the purchaser. The price is 75c per one pound tin, post paid to any address. Orders should be mailed to The Anglo-Ceylon company, 244 California St., San Francisco.

SEND FOR PREMIUM LIST.

A letter from J. L. McCarthy, Secretary of the State Agricultural Society, asks every one interested to write him at once for a copy of the new 1913 State Fair Premium List. Write at once to him at Sacramento.

YOUR OPPORTUNITY

21 ACRES choice land situated only 26 miles from San Francisco and 2 miles from a good thriving town. Eleven acres in 12-year-old grape vines; 10 acres open land, suitable for fruits, etc. Climatic conditions the best. This is your opportunity to secure a good income property that will return 15% on the purchase price this year

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Mark and consign all shipments direct to the old and reliable firm of W. C. PRICE & COMPANY, 209 Clay St., San Francisco.

Established in 1876. References: The Anglo & London Paris National Bank, and the Central National Bank of Oakland.

FARM BOOKS.

The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Hog Book, Dawson	1.60
The Dairy Farm, Gurler	1.10
Greenhouse Management, Taft	1.50
Mushroom Culture, Falconer	1.00
The Study of Corn, Shoesmith	.50
The Hop, Myrick	1.50
Meadows and Pastures, Wing	1.50
Trees and California, Jepson	2.50
Asparagus Culture, Hexamer	.50
New Onion Culture, Greiner	.50
American Cattle Doctor, Dadd	1.00
Home Pork Making, Fulton	.50
Farm Gas Engines, Brate	1.10
The Book of Alfalfa, Coburn	$2.00
Swine in America, Coburn	2.50
Feeds and Feeding, Henry	2.25
Farm Development, Hays	2.00
Manual of Laws	2.25
Farm Buildings	2.20
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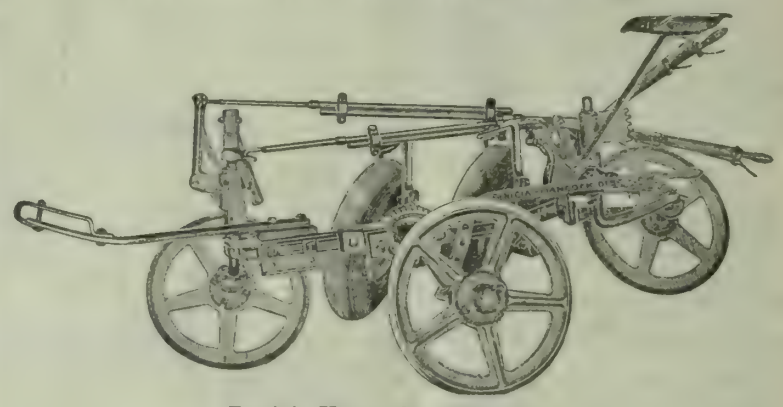

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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 5. SAN FRANCISCO, SATURDAY, AUGUST 2, 1913. Forty-Third Year.

Crops in the Young Orchard.

[Written for the PACIFIC RURAL PRESS.]

The main problem confronting the new fruit man is how to make the land produce a living for him while he is waiting for his orchard to come into bearing. There are a number of ways this may be done, as may be seen in almost any new fruit section where different men are found who have worked out practices which will apply to their conditions.

Perhaps no other class of crops fit into the orchard-growing scheme so well as small fruits and vegetables; but as even berries take one year or more of time and attention to produce any revenue, a truck patch may be the quickest way of getting some returns from the land, providing, of course, that one has irrigation, suitable soil, a market, and last, but not least, an inclination to properly cultivate and care for the growing crop.

Vegetables As a Business.—The chief reason that so many failures are reported in the trucking business is due to both a lack of cultural and business knowledge, for there is no line of farming which requires more of these two essentials, and in order to make the biggest success, one has to spend years in studying his soil and market. Perhaps the market should receive the most attention, for no matter what one is growing, he must meet the market requirements, both as to varieties and in shipping at the time the market is in the best condition for good prices. It is for this reason that the fruit-grower who expects to grow vegetables between the trees for a few years should gather all of the information possible as to his market, shipping or hauling facilities, and what will grow well on his soil and in his climate. Large cities usually afford the best markets for produce of all kinds, and yet there is scarcely a small town in the State which does not ship in most of the vegetables used, and almost any merchant prefers to buy from the local grower, providing he can depend upon the supply and quality. While marketing a good-sized crop of cabbage one year in Los Angeles county, we went to a large retail produce concern seeking a market. At first they told us they shipped in their cabbage and were entirely satisfied, as both the quality and suuply could be depended upon; but after some conversation the dealer stated that "the trouble with you farmers is that we can't depend upon you to bring us vegetables when we want them, and as a consequence we go to the city market, where we can always get what we want at any time." After some further talk on the matter, he finally promised to give us a trial, and we sold our entire crop to him, but we always supplied him with cabbage whether it inconvenienced us or not.

Perhaps no one man is better posted on market and cultural conditions for the San Francisco markets than F. H. Williams, of San Leandro, whose methods of tomato culture were described in these columns in the issue of May 31. While there are numerous other crops, such as potatoes, cabbage, cauliflower, and a large list of profitable vegetables, Mr. Williams confines his operations in the main to tomatoes, sweet corn, cucumbers, and rhubarb, and a visit to his place revealed the following facts concerning the growing and marketing which should be of benefit to growers all over the State.

Sweet Corn.—No doubt most readers are more or less familiar with the growing of corn, but a few lessons may be obtained from Mr. Williams' methods. He uses the Early Mammoth variety, which he states is the most satisfactory, both as to yield and for market requirements. After plowing and harrowing the ground thoroughly in the spring, he starts planting about March 20, and continues at different intervals until the middle of June. There are several reasons for not planting all at one time where much of an acreage is to be planted: first, to have the crop come on at different times, so that the market will not become glutted at any one time, and also that in case one crop did not hit the market when prices were right, the following one would help to balance up the gross returns for the season; also that if pests or other injurious conditions should arise during one planting, it might be overcome with the future crops. On this ranch the plantings are divided so that when 40 acres are put in, four acres are planted every week for 10 weeks. The rows are drilled in 42 inches apart and thinned in the row to two plants to the hill which are 30 inches apart. When ready for marketing, the ears are pulled off and the husk cut open with a sharp knife to see the quality. Two grades are made, the first quality going into one sack and the second going into another. By careful packing, an ordinary sack will hold from seven to eight dozen ears, but one rule strictly enforced is to make a good pack of the firsts, as

(Continued on Page 101.)

Vegetable Variety, Scene Near Fairmead Colonies.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., July 29, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.09	.24	.11	62	54
Red Bluff	.00	T	.00	90	62
Sacramento	T	.00	.00	84	56
San Francisco	.01	.07	.01	70	56
San Jose	.01	.09	.00	82	58
Fresno	.00	.32	.00	94	58
Independence	.04	1.46	.00	82	52
San Luis Obispo	.00	T	.01	74	54
Los Angeles	.00	.00	.00	76	60
San Diego	.01	.00	.00	72	60

The Week.

The present issue is probably the last one for several months to be gotten out with the editor off and unable to take more or less personal charge of affairs. The American Commission to Investigate Farm Credits has returned to its native soil, the ship has docked at New York, and Prof. Wickson is, at the time this is being written, traveling across across the continent, not directly, but by easy degrees, and it is expected that our issue of August 9th will be gotten out in large part with the same crew as was in charge this Spring. And we want to take this opportunity to take off our hat to Prof. Wickson as having just about the greatest capacity for work of anybody we ever knew or thought of knowing. Somewhere near two score years ago he took charge of the RURAL PRESS, and made it and kept it the leading farm paper of California and the Pacific Coast. Then by degrees he became Professor of Horticulture and Agriculture at the University of California, but the PACIFIC RURAL PRESS sailed along just the same. He became Dean of the College of Agriculture and Director of the Agricultural Experiment Station, general advisor to puzzled farmers throughout the State, big brother to the college boys in his department, and public citizen generally: every job in the lot being about enough for one person to look after, and every job well done. Now, after only a little more than three months of acting editorship of the PACIFIC RURAL PRESS and the baby brother at Stockton, we have it driven at us in full force what Prof. Wickson has had to do and, as stated before, have to hand it to him for being the champion assimilator of work. Perhaps Colonel Roosevelt has the greatest reputation for the strenuous life and he surely can get work done, too, and make an uproar about it, but the Professor is surely a genius for getting the work done properly with very little confusion.

It might be mentioned in passing, if any of our readers have not given the "Out in the World" letters the attention that they deserved on the ground that they treated of finance and that finance was too troublesome a thing to bother about, that this is just the biggest thing in the country today. The politicians at Washington and elsewhere are hurrahing about it and making speeches on the subject which no one listens to, and writing articles and plans which no one reads, and financiers are incorporating companies to finance farm credits and, we suppose, selling stock in same, or trying to. All of which are signs of the coming of proper farm credits as rakes and hoes and seed catalogs are signs of spring. Anyone who thinks that finance is too weighty to read about is due for a lot of trouble in his own finance and had better wake up and learn of some actual doings that are of revolutionary significance. As far as the far credit schemes that politicians and financiers propose are concerned, they may be all right, but any plans that work have to be put into operation by the men who are going to use them, not by the higher-ups, and by the same token, the more that the farmers, the men to practice farm credit financeering, know about farm credits and the quicker they know it, the sooner the much-needed revolution of farm financeering will come. When it does come, it will mean better prices for goods purchased, better prices for goods sold, and an awful swat at the middleman coming and going. All we're saying is that a great old revolution is about starting in favor of the farmer and everybody get in line. If you don't get in line, remember the fact at least.

Out in the World.

[BY THE EDITOR.]

[In our last issue Professor Wickson discussed German aspects of rural co-operative credit, also some of the principles involved and some of the methods employed with reference to the attitude of the Governments and older financial institutions thereto. The subject proved too complex to admit of more than sketchy treatment. In this issue the writer hurries on to France and makes some allusions to ideas and methods which are, in some particulars, in contrast with those of Germany.—ASSOCIATE.]

It was perhaps irresistible that a bunch of Americans, such as we are running with, should feel more at home in France than elsewhere in Europe. It was a little surprising, perhaps, that the historic affiliation of the two peoples should appear so strongly in heredity, but its warmth was disclosed at first contact of the present generations of Americans and Frenchmen, as a smoldering fire blazes on admission of fresh air. It was neither planned nor anticipated: it was almost an involuntary emotion. As we are not studying world politics, we undertake no farther comment. Current experience seems to indicate, however, that there is no doubt where the United States and France would stand on a world question, if the orators of both countries should disclose any of the fire of their ancestors.

French Credit-Promoters Complacent.

French promoters of credit for farmers are fully satisfied of two things: first, that they have attained wonderful success during the last twenty years; second, that they have done original work.

One thing is very noticeable about these promoters in France: they are not nobles, and they are not priests. Both nobles and priests have had a hard time in France for a century or more, and it is not surprising that they are not now conspicuous enough to attract attention. We are not sure that we saw either a prince or a monsignor in all our excursions into the avenues of agricultural credit, while in countries previously visited we were always stumbling over them—so heavily laden with altruism that they but slowly cleared our track. But though we miss the princes and priests in France, we find plenty of politicians in the agricultural promotion line. This is, however, unavoidable. One must be able to do politics well in order to get anywhere in agricultural promotion—and it is also true vice versa, as our own national party platforms of last year amply testified. We are, therefore, not objecting to the politics in French farm-credit progress. We need more of it in our own, and our farmers will be to blame if they do not do more of it themselves. In France, for the last twenty years at least, all political parties which have come into power have pushed propositions for fairer finance for agriculture and have enacted them into laws. The enabling laws for it are in continuous series since 1894, and bear the signatures of all presidents and ministers who have had their hands on the helm of the state since that date. Evidently, if we attain what we need in our country and in our several States, it will be by the political route, and our farmers must go that way. If they attempt to advance farther by the subway of resolutions or by the airships of oratory alone, they will never arrive.

Another very noticeable thing about the French view of modern agricultural finance is that its creators honestly believe that the ideas and methods which they have are original with them. They do not admit that they have learned anything from other countries—least of all from Germany—which is not a surprising attitude of mind. This is not a matter of any importance to us; all European countries have patriotic economists who can fight that out among themselves. We do find out, however, in a tentative sort of way, that the French are working wonders in co-operation and farm finance without some of the fundamental requirements which seem to render the German system practically prohibitive to our adoption, and they do attain admirable results with less objectionable forms of paternalism in their essential forces. In the first category comes their experience that unlimited liability on the part of members of co-operative credit societies is not necessary. They frankly admit that the French farmers would not stand for it, and if it had been insisted upon, no co-operative credit could have been organized at all in France. Second, they claim that their system is not paternal at all; that it is built from the bottom upward. We shall revert to both these propositions a little later. The point we make in this connection is simply that the French leaders think they have good reason to be complacent.

The French Have Officially But One System.

Quite in contrast with the Germans, who have so many ways of skinning the financial cat that we shrank from even enumerating them, France has only one official system for financing farmers Though it is working under a dozen or more statutes, it is one system, nevertheless. Of course, it must not be forgotten that the German Empire is a collection of states, and each of them has some forms of sovereignty in social and financial as well as in political affairs. France is simply one sovereign state. In this respect Germany is more like the United States, but that is about as far as the analogy goes. Of course, the imperial outfit at Berlin does things which our national equipment at Washington could not do to save its life —even if it should ever desire to do so, which is unthinkable, some reader might think that as the German states differ in their credit methods, there might be in the empire methods enough to satisfy the conditions in the several states in our Union—one fitting here and another there.

That seems plausible, but we are not sure that it is true, because of the different qualities of citizenship and individual attitude and point of view. We are not sure that any of the various German methods will be at home in any of our States. And though the French have essentially but one system which is officially promoted, it has just as good a chance to meet our requirements as the German variety has. Whether in the construction of an American system of agricultural credit we shall take more or less from the German than from the French, no one but a very long distance prophet can predict.

Credit Agricole and How It Came About.

The one system of credit to farmers in which the official farmers of the French Republic take particular delight is their Credit Agricole, which they regard as built from the bottom upward, the initiative being held to be vested in the small farmer and which, if earnestly pursued through several legal stages, opens to him the national treasury. We will not undertake to trace the steps by which the French farmers advanced to this point of conscious initiative. They have had for many decades their local organizations—called, in some cases, "syndicates," and this term does not have with the French the same significance as it has come to assume with us. It does not, for instance, mean a promoting, monopolizing aggregation of capitalists; quite otherwise. In France, agriculturally at least, it means an association of farmers coming together for their own defense or other advantage and usually in a very small way—just as an American neighborhood farmers club might come together. Such things have existed in France for decades and did their members much good, no doubt. About 20 years ago, there was considerable strength in such societies, but conditions arose which they were not able to adjust to their advantage. Their members needed money in their farming and they could not get it except at very high cost. The powerful banks gave credit to large land owners but they did not seem inclined to do business with the little fellows. The latter had to go to the notaries, who were a sort of brokers or middlemen for capitalists, and these notaries required high fees and mortgages for insignificant amounts of money. They also charged interest at 5 and 6%, which was regarded as very high. If they did not have land to mortgage, they had to go to a loan shark and these big-mouthed fish swallowed 10 to 50 and even 100% for loans. While they were doing this there was no lack of money in the country. The Bank of France and other institutions were full of money, which they wished to put at interest but under their charters they could only discount bills for three months or less and these little fellows had no bank standing anyway. At this point the eye of French statesmanship fell upon them. "What is this," cried the official friends of the farmers; "these little fellows are the foundation of the prosperity of France. Why should we allow them to be skinned by loan sharks and their pelts made into striped waistcoats for usurers? We will protect them for the good of the country."

How the Government Tapped the Bank.

There has been in Paris since the first Napoleon or longer a great financial concern known as the Bank of France. It has enjoyed a monopoly of issuing paper money with all the profits of that business. But its charter expired and that unlucky event came just at the time when the French government awoke to the desirability of helping the farmers and so said the government to the Bank of France: "If you wish to go on with your paper money manufacture, you must give us $8,000,000 to loan to farmers without interest and you must give us annually hereafter a certain share of your profits for the same purpose." And it was so.

This began some years ago, when the discount rate of the Bank was 3%, the government receiving a credit with the Bank for loans to farmers of one-eighth of its profits each year on the discount business. Unfortunately for the Bank, its charter expired again and it had to apply for renewal. Meantime the discount rate had been advanced to 4% and the government concluded that it was not getting its share of the profits for farmers loans and possibly, by advancing its rate the Bank was recouping itself for the loss on the cheap money furnished for farmers' loans by raising the rate too high on commerce and manufacture which needed money. And so the charter of the Bank was renewed on a sliding scale of sharing the profits with the government. If the discount rate is 4% the government gets one-seventh of the profits and if the discount rate is raised, the government gets one-sixth. It has happened that the rate has been raised and the Bank of France is now furnishing money for loans to farmers at the rate of $2,800,000 a year. To make a long story short, by its taking a share in the brisk business of the Bank of France, the French government has secured a total of $26,000,000 for loans to farmers of which it has already placed $19,000,000 and has still to its credit $7,000,000 available for such use. The government gets this money without interest and loans it at 2¼%—the fraction being used to meet cost of handling and the 2% going into a sinking fund (amortisation as discussed in a previous letter) by which the loan is repaid automatically. This money is therefore not a gift for the extension of agriculture. The French government is inclined to expect that in 20 years or so all the money it has squeezed out of the Bank of France for loans to farmers will be repaid and will be ready for some other public benefit.

Why the Bank of France Enjoys It.

But we notice that we are writing rather irreverently of the greatest financial thing in the French Republic, viz: the Bank of France. It is wrong to do that; it is wrong to convey the idea that the Bank is being squeezed against its will. We are led to that notion by the fact that all the leaders in farm finance whom we came into contact with spoke freely of their cordial relations with the Bank and acknowledged indebtedness to the patriotic management of the Bank for the great success of the Credit Agricole. We surely got the idea that the Bank was not lashed an unwilling captive to the chariot wheels of French farm development but rather enjoyed being whirled around in that way. It is a little dangerous to intimate that any European has any interested motive in his patriotism. We do it freely enough in our talks about each other in the United States, but we advise our friends to be careful how they impugn motives in Europe. The continental people take insults very seriously and they have no use for jokes along that line. We have therefore to be very careful in suggesting that the Bank of France has found its agricultural patriotism very profitable and we take the ground that the resulting benefits were accidental and that the heroism of its sacrifice is not to be dimmed by the gleam of the gold which the forced favors to agriculture has brought to the institution. It came about in this way:

How to Make Three Names Out of One.

The Bank of France has an old requirement in its charter that in discounting commercial paper it must have three names attached thereto; the signer and two endorsers. This provision it co not waive for fear of reducing the security of it dealings with merchants, manufacturers, etc.,—therefore all its new charters retained this time-honored requirement. This three-signature rule precluded discounting agricultural paper for two reasons: First because individual French farmers do not like to sign notes any better than American farmers do; second, if they would sign, their names it would not have any banking value because they were mostly little fellows who had no commercial rating. Evidently two things had to be done: Get two endorsements and give them banking value. If this could be done an entirely new line of banking would be opened of unimpeachable security; a new use for money—and we imagine that if there is anything a banker with a few scores of millions in his tanks really likes, it is this.

And just that has been achieved and the Bank of France has the control of it, and is working it over-time to the great advantage of its farming proteges, to the great upbuilding of French financial strength and, incidentally, to the great activity of its own business. Therefore we hope we are not casting aspersions when we suggest that the patriotism of the Bank of France is of the glad sort. There is also here a hint for other bankers, if they need it; being good to farmers is being good to yourself.

To make all this possible three names are made out of one, in this way. The Credit Agricole has four stories, thus:—

Farmers Clubs or Syndicates
Local Banks
Regional Banks
The Bank of France.

(1) Any sort of a farmers' society in a neighborhood may resolve itself into a local bank, or any group of unorganized farmers may do the same thing, by complying with the law providing for their establishment. Shares may range in value from $5 to $20 and subscribers for these shares may pay in one-quarter or one-half or whatever they like on the shares they subscribe for.

As soon as the local bank gets some money in this way, it becomes connected with a regional bank by buying shares therein and paying over the money it receives to the regional bank or making deposits therein. The local bank holds no money, but it keeps its own records and has its own managing directors and its signature goes first as an endorsement upon the note of one of its members, whom it recommends for a loan. Thus a borrower starts with the collective credit of his neighborhood, and, of course, it requires a pretty good man to start at all, for if he is not good he cannot get admission to his neighborhood bank, and if he is not a member he cannot borrow at all. The local bank has no paid officers except the secretary, who is paid from $40 to $200 a year, according to the business done. There are more than 4000 such local banks in France.

(2) The Regional Banks, of which there are about 100 in France, are real banks in the sense of receiving and paying out money. They keep watch of the local Banks tributary to them, supervise their bookkeeping and are responsible to the government bank-examiners for them. They do not deal with individuals, except as depositors; the local banks are their shareholders and constitute their membership. The government is able to keep tab on a hundred of them while it would be practically impossible to keep the run of 4000 local bank secretaries whose offices are in their hats. All business initiated by the local banks is really done by the regional banks and their officers sign the applications for loans which are

forwarded from the local banks, thus making the second endorsement. The note of an applicant has then two endorsements—three names in all (two of them representing collective security) and it is ready to meet the requirements of the Bank of France, as previously stated.

Short and Long-Term Credit.

The Credit Agricole works its machinery for both short and long term credit. What we have said thus far relates chiefly to the former, though the relations of the Local banks, the Regional banks and the Bank of France are the same for all forms of credit. If it is a long term credit at 2¼% interest, covering cost of handling and amortisation, the money must come out of the free-of-interest funds which the Bank gives the government. If it is a short term credit at, say, 4%, the Bank of France re-discounts for the Regional bank without using government free-money, for it is a good sort of business of its own. Also longer than three months can be given on such a loan because it can be paid and reissued to the Regional bank on the original set of papers. The Regional banks are not restricted to dealings with the Bank of France; they can get money wherever they can find it idle and they also have deposits of their own which they wish to keep busy. Thus it appears that about 100 Regional banks in the French agricultural districts are the real working powers of the Credit Agricole; on the one hand they use the Local banks for information and endorsement, and on the other hand they get money from the Bank of France as they need it in the ways stated. They are able not only to furnish credit on specific notes, but they furnish open accounts to farmers to an established maximum of over-draft, charging interest only on the amount of money actually drawn out for the time the over-draft exists and no longer. There seems to be no doubt whatever that French agriculture is amply and cheaply financed in this way.

At another time we hope to discuss further the arrangements for long term credit of the Credit Agricole and to allude also to the Credit Foncier, which is a very different concern and not a government affair, except in that its transactions are examined uder the banking laws.

Renounce Unlimited Liability.

It must be noted briefly that the French system has nothing to do with unlimited liability of share holding members, which is the cornerstone of one type of German credit societies, as we have noted in earlier letters. The French claim that a system of unlimited liability could not prevail with their democratic, independent peasantry; also that as loans to farmers who have the good opinion of their neighbors are repaid with an altogether insignificant percentage of loss, it is useless to invoke such objectional methods as to make every man responsible to his last cent for his fellow members. They have therefore rejected it largely from their system and their experience of twenty years seems to demonstrate that a limited responsibility of shareholders constituting a collective security of the society has stood a strain which has broken commercial banks and is so secure that it satisfies the most exacting financiers. So far as we know at this moment only one-fourth of the Local credit societies in France have unlimited liability of members. There is, of course, no objection to a local society adopting unlimited liability if it desires, but it does not impair the credit standing of such a society not to do it.

Fnancing Other Forms of Co-operation.

In the foregoing sketch we have not gone beyond forms of personal agricultural credit—nor have we completed even that. Anticipating future discussions we must say that the Credit Agricole is also busy with financing farmers' purchase and sale societies, mutual insurance on buildings, cattle, etc., development enterprises for land reclamation, settlement on lands both by colonies and by farmers who have no money to start with, and, in short, is doing all kinds of business which promises to make farmers more prosperous or to make more farmers to be prosperous. A vigorous promotive propaganda is maintained by the government which ceaselessly works for agricultural organization as good for the farmer and good for the country. A very interesting system is in operation for the distribution of the free-money of the government to the Regional banks which are its constituted disbursing agents. Of this, too, we must discourse at another time.

Success on a Hillside Orchard.

[Written for the PACIFIC RURAL PRESS by W. H. SCHRADER.]

Away up in the eastern hills of Santa Clara County, almost under the shadow of the Lick Observatory on Mt. Hamilton, I found one of the finest young orchards I have ever seen. It is owned by Elmer Williams and consists of 120 acres or more and is mostly on steep hillsides. The trees are from 4 to 6 years old and the varieties principally apricots, prunes, apples and almonds.

This "eastern hills' section, owing to its rich, deep, well-drained soil and its freedom from frost, is the natural home of the apricot. But it required in addition to natural advantages the best horticultural methods to accomplish what Mr. Williams did with a block of Moorpark trees. These trees were 4 years old in 1911 and the gross proceeds of the crop that year paid for the land, the nursery stock and the four years' care of the trees. His neighbors thought that in forcing such a crop he had ruined his trees; but last year they again produced a full crop. This year, by vigorous cutting of wood, the trees were given a test, bearing only a moderate crop. Judging from the present healthy, vigorous look of the trees and the way the buds are forming, next season's crop will be a bumper one. Such a showing for the Moorpark, a naturally shy bearer, is remarkable.

Mr. Williams' prunes bore full crops in 1911 and 1912 and this year with less than 5 inches of rainfall, the limbs are bending to the ground with fruit and the trees show no want of moisture.

My main object in visiting Mr. Williams was to learn his methods of hillside cultivation. From the results accomplished, I thought his system must be an elaborate one and one that required many expensive implements. I found that his equipment consists of a Benicia Reversible disc plow, a Knapp hillside plow, a spring tooth cultivator and an ordinary harrow, and that's about all. As to how elaborate his system is, the reader can judge from Mr. Williams' statement that with the help of one man for three months in the year, he has taken care of his 120 acres and found time to read every word in the Pacific Rural Press every week besides.

Two factors simplify Mr. Williams' cultivation problem. The first is the nature of the soil, a deep, black loam, slightly adobe, but friable. This retains moisture and, being on a steep slope, is well drained. The second factor is the result of the owner's foresight in following the contour of the hills in planting his trees.

Mr. Williams lays heavy stress on early and deep plowing. In December, with three horses hitched to the reversible disc plow, he puts it down as far as it will go. He doesn't mind cutting a few roots, says that they have no business near the top when they have so much room below. Starting on the upper side of the row, he throws the first furrow right up to the trees. Sixteen feet of the twenty is plowed with the reversible disc. With the two-horse sidehill plow, the plowing is completed, one furrow being plowed on the upper side, or if necessary to keep the ground from piling up, several furrows may be plowed above the rows. On the sidehill plow an extension hitch is used consisting of an iron bar two feet long and three inches wide with hitch holes at intervals of six inches or so. One end of this bar is fastened to the end of the plow beam, and the other end by means of a chain six or eight feet long to rear end of the beam. This hitch is reversible and will pull the plow right up to the trees while the team walks clear of the branches.

This early deep plowing lets in the air and all the water that falls. In the spring, the spring tooth harrow used crosswise or diagonally loosens up the surface and uproots the weeds. Then with the ordinary harrow a mulch is created and maintained through the summer. Our readers will no doubt hear more about, or possibly from, Mr. Williams. He is an ex-school teacher and he uses his brains as well as his muscle in his farming.

ALFALFA AND FOOTHILL SOILS.

To the Editor: In the issue of July 12 in an answer to a query on Soil for Alfalfa, you state that fairly good stands of alfalfa have been secured on that red foothill type of clay soil, though it is not real alfalfa soil. Can you give the data on that? There is a great area of just such lands wasting away under fairly good rain and snowfalls that if once in alfalfa would be productive of great results for those small settlers in the foothills who have to haul their hay from the valleys. —E. G., Berkeley.

What is wanted here is evidently reports of actual cases where alfalfa has been a success on such soils. As we understood the previous question the soil was not in the foothills, but simply of the foothill type, found frequently along the eastern side of the Sacramento and San Joaquin valleys as well as up in the foothills themselves. The adaptability to alfalfa would be about the same in either situation, though the methods of culture would be different. Failures galore have been made with alfalfa in foothill and valley, but successes have also been secured, and those failures make the benefits of a knowledge of successful culture all the more valuable. Will anybody who has had success in getting alfalfa to grow on that red soil, naturally rather barren, running together when wet and stepped on, and caking when dry, please tell how it was attained, whether said success was in the hills where furrow irrigation was necessary, or down in the valley where ordinary checks were used?

If we tried to start alfalfa on such land we would probably put on some lime, give it a dressing of manure and quite surely inoculate the soil, still, facts are better than theory and we don't want to have to hunt up alfalfa fields in person if we don't have to.

BEANS ON DRAINED LAND.

To the Editor: I have a few acres of land that 30 years ago were in cultivation and produced fine crops of beans, but became too wet to cultivate and for 25 years or so have lain in a semi-marshy condition, with considerable alkali showing up on it. I tilled it last year and it is now dry enough to till, but will not produce any thing, it being impossible to get it into condition to plant and when enough tilth can be worked up the bean seed will not even sprout in it. The whole surface acts like ground that has been salted. What would you advise? I have heard about gypsum but had no experience with it. If gypsum is what it needs, how much per acre is sown and where can it be bought?—H. E. E., Carpenteria.

It seems probable that there is a good deal of alkali left in your land and if so it is out of the question to grow beans, which are one of the most susceptible plants to alkali that are grown. Sugar beets are very resistant to alkali and help to remove it from the soil and perhaps you can grow them well. What is most needed, however, is more water to wash through the surface soil, into the drains and away, taking the alkali salts with it. If you could flood the land and let the water drain off, it would help, otherwise you will have to wait until the rains set in. It is only a question of

time before the alkali will be sufficiently removed to grow good crops whatever is done or not done, provided the tiles drainage system works properly.

Gypsum will be an assistance in removing black alkali only, but not white alkali, and it is excellent to loosen up soil that is inclined to puddle. Possibly also the waterlogged condition of 25 years has washed out most of the free lime and some will be needed to sweeten it before any crop will grow very much, to say nothing of beans, which will hardly grow in sour or neutral soil. Beans under any conditions will not do well until the air has had a chance to freshen the soil up again. Your best plan, then, is to get more alkali out, or if there are no great amounts of alkali left, to raise hay or some other crops on it for a while before getting to more intensive crops, then if the soil does not get into good trim, put on a lot of lime.

If black alkali is present in fair quantities, which is possible since your soil is very refractory, perhaps two tons will be necessary per acre, and if lime is needed as much should be put on, probably air slaked or ground limestone. You can get gypsum or lime from advertisers of same in our columns, also from any of the leading fertilizer companies.

Marketing Vegetables.

[Written for the PACIFIC RURAL PRESS.]

While there is so much talk going the rounds of how the producer and consumer can get together, we have often thought that a little plan which worked out satisfactory for one man we know of would perhaps help a large number of small farmers.

This man owned 15 acres in Los Angeles County which had cost him $425 an acre and as it was out of the citrus fruit district and the soil was too shallow for profitable deciduous fruit culture, it was decided to plant out a few acres to rhubarb and the balance was to be used for trucking, cabbage, peas and cauliflower being the chief vegetables.

At first it was thought that being close to the Los Angeles market, no trouble would be experienced in getting good prices as when he went into the retail stores the price was always high enough.

As the rhubarb was to be the main crop a great deal of work was done in properly preparing the soil and by giving it good care the first crop was ready early in the fall, and after making arrangements with a commission man to handle it the first picking started. Being an enthusiast over grading as done by orange and lemon growers, this farmer decided to grade his rhubarb in the belief that he could get a better price, but like many others he found when he received his first statement that his rhubarb had sold at the regular market quotation minus a fixed charge for transportation and also minus a 10 per cent commission. After paying commission, transportation and the cost of boxes he found that after meeting these expenses he was receiving about 1½ cents per pound for rhubarb which retailed for from 3 to 7 cents a pound.

Most of the first crop was harvested in this way, but from that time on a new plan has been used which is as follows: A buyers' guide and a sellers' guide was secured from the Wells Fargo Express Company for their Western States territory. This sellers' guide gave the name of every merchant who was a buyer of vegetables in Arizona, New Mexico, California, Oregon, Washington and Idaho. With the aid of this list a large mailing list was secured which at first was selected, principally at points in Arizona, that territory being close for shipping.

A thousand letter heads and envelopes were printed on which a nice cut of vegetables was shown and the reading matter stated that this man was a grower and shipper. A typewriter was purchased and the first circular letters were sent out, quoting prices f. o. b. at electric station near ranch, and placed special emphasis upon the fact that only the very best products would be shipped and that any one buying from this firm could be sure of supplying their trade with only the best vegetables obtainable.

The price set on rhubarb was $1.40 for a 40-pound box, the buyer to pay transportation charges.

In a short time these letters began to bring in the business and by careful culling and packing it was held. Later on when his other vegetables came on he sent out another letter and as he had established somewhat of a reputation by that time his marketing problems were practically at an end.

After several months' dealing in this way direct with the merchant he found that from the rhubarb for which he had received 1½ cents net in the old way he was now getting 3¼ cents net for, and after getting his trade lined up had regular customers who would take his entire output.

From an investment of $10 in stationery this man's experience seems to indicate that many of our small ranchers could do better than to ship to the commission man as long as he will not pay an extra price for a superior product.

Most any merchant either close at home or at a distance would rather pay the farmer as good or better prices for good fresh vegetables than to get the same from the commission man, and we believe if the farmers would grade more and seek the retail merchant trade more, better prices could be obtained.

CROPS IN THE YOUNG ORCHARD.

(*Continued From Page 97.*)

both the quality and quantity of this lot must comply with Mr. Williams' trade-mark standard. This trade-mark also shows what may be done by the grower; for, since establishing this standard, buyers have become so well acquainted with it that they are willing to pay a premium for anything sold under it, as they are sure it can be depended upon. We were told that sweet corn varied in different years as to the net returns, but that this year it would pay better than any other crop on the place.

Of course, the planting season varies greatly in different parts of the State, and one should study the frost factor in his locality very carefully before planting.

Cucumbers.—While the cucumbers grown on this ranch are primarily for use at the pickle factories nearby, a part of them is also marketed, so that the general conditions are the same. In this district, after a good plowing and harrowing of the ground in the spring, the seed is planted in rows, 4 feet apart, from April 15 to May 15. Later on the plants are thinned to two in a hill which are 3 feet apart. The picking season lasts from July 1 to October 1 for pickle cucumbers, which are graded into four sizes and numbered 1, 2, 3, 4. Size 4 is too large for the factory, so is packed and shipped into the city market. During harvest season the field is picked over every 3 or 4 days, the idea being that the oftener the plant is picked from, the longer life it will have. Another point which most growers in that section have discovered is that where pickle cucumbers are to be sold it pays to pick the smaller ones, or size No. 1, for which a much higher price may be obtained, as it is thought that a field will only produce so much tonnage, whether the small ones or large ones are picked.

While it is naturally hard to put any certain figure as to net returns, from $50 to $75 per acre is usually secured in the San Leandro district, and where they are grown entirely for market purposes should be more profitable; but of course the acreage for the ordinary market could not be very large, as cucumbers mature about the fastest of any garden crop once they start.

Rhubarb.—While this plant is somewhat like berries as to the length of time required to come into bearing, it is one of the most suitable of all young orchard vegetables, as it is profitable and does not require so much attention as smaller vegetables, except during the picking season, which varies with varieties in our mild climate from early fall until late spring. The variety grown in the San Leandro and Hayward districts is the Strawberry, which is a variety that was, through selection, originated in those district and usually yields from 200 to 300 boxes a year which nets the grower from 85 cents to $1 per box. Mr. Williams' method with rhubarb is about the same as other growers in the section, and is as follows: The planting is done in January, as a rule, and instead of using young plants which have been grown from seed, old plants are cut up, one eye being sufficient for each new plant. The field is marked off in rows 5 feet apart, and a round is made with a 12-inch plow, turning the dirt from the center each way. A plant is set in the bottom of this furrow every 3 feet, with a short-handled hoe. Planting during the rainy season, no other moisture is supplied, the only care the first year being to cultivate thoroughly and to hoe the dirt in toward the plants at different times until the ground is level again.

No picking is done the first season from these plants, and the only work done is to run a cultivator through the patch once in a while to keep down weeds. The next January after planting, a man with a single-horse plow ridges up the rows from both sides; in fact, covers the entire plant with soil. It is then ready for harvesting, which season lasts for about three months. By ridging up the rows in this manner frost is no factor, and the stalks are nice and tender. The ground is left in that condition until after picking season, when it is hoed back between the rows and the plant left exposed.

In harvesting, the stalks are pulled and the leaf and bottom end trimmed, then carried to a trough, where they are washed and packed in apple boxes which hold 40 pounds net. Three grades are made, and receive prices according to the quality. An Association has been formed in these sections which handled 90 per cent of the crop last year and proved very successful.

As rhubarb is a rank grower, anyone growing it in an orchard should provide it with plenty of fertilizer and moisture, otherwise it will rob the young orchard of these two necessities. Mr. Williams states that he would consider three rows of rhubarb about the number to plant between trees of an orchard and still not hurt the growth of the trees.

In concluding, it should be said that rhubarb of all varieties does best on a deep rich soil with good drainage. The Winter Crimson variety has become very popular during recent years, and we will endeavor to have something on growing it at a future time in these columns.

RUSSIAN THISTLE INFESTATION.

To the Editor: Kindly identify the enclosed weed. I purchased alfalfa seed and the crop contains a lot of this weed. Will a good stand of alfalfa kill it out?—L. Solvang.

Answer by Prof. W. A. Setchell, University of California.

The plant is the far-famed Russian Thistle, or botanically, Salsola Kali tenuifolia, a pernicious weed, especially in unfenced areas. It is a tumble weed, spreading its seeds by rolling about when ripe.

It is described and discussed in Bulletin No. 107, Agricultural Experiment Station, University of California. If the plant can be removed early by rooting out, or if later, it can be burned, it may be eradicated. Fences prevent its spreading and a very little heat kills the seeds. It is an annual.

NEED OF CORN SUCKERING.

To the Editor: To insure the best crop of corn possible does it pay to sucker it or not?—I. W. A., Potter Valley.

The removal of suckers is a matter of local conditions largely in California, and growers are getting out of the habit of suckering. In some places suckering is needed, and in others it apparently does not pay to do so, although with very rare exceptions a larger yield can be secured by suckering than without. Probably suckering will be much cheaper in your locality than in the central valley and will be advisable. Where there is so much difference according to location and conditions it is difficult to give advice and a decision will have to be based largely on experience. The matter of expense is probably the most important point to consider in your case, and unless the work will cost a good deal it had better be done.

Preliminary Report on Rural Credit and Co-operation.

The American Commission which our editor is writing from week to week has adopted a preliminary report of its findings, as follows:

The American commission on agricultural credit and co-operation has completed its tour of European countries and has perfected plans to digest and compile the information obtained with regard to co-operation and the organization of rural life in European countries along financial, business and social lines. It is believed that this task can be completed before the end of the present year when the final report of the commission will be submitted.

The commission is deeply impressed with the vital importance of a thoroughly organized and united rural population. In this respect the countries of Europe offer a lesson which may not long be disregarded in America without serious consequences.

The agricultural interests of most of the European countries visited by the Commission are organized along one or more of the following lines: Credit, production, distribution, and the social organization for the betterment of country life.

Organization for the provision of credit facilities for European farmers follows the natural division into short time personal credit and "long time land mortgage credit." The organization for the divisions of personal credit facilities are as highly developed as are the systems of commercial banking. The prevailing rate of interest paid by the farmers for short time loans is from four to five and one-half per cent. The terms afforded European farmers are generally more suited to meet the peculiar requirements of agriculturists than are the terms obtainable today by the American farmers.

The personal credit organizations have the form of co-operative societies. Very often the members of these societies assume unlimited liability for the debts of the societies, in other cases the societies take the form of limited liability, and as a rule in European countries the law makes little or no provision for exemptions of any kind.

These short term credit societies make cheap, safe and elastic credit more readily available to their members by reason of their control by farmers and are organizations exclusively in the interest of farmers who operate them at nominal cost without seeking dividend profit.

Land mortgage credit has been organized so as to place a collective security back of bonds issued by land mortgage societies, in contrast with the system of marketing individual loans upon individual mortgages. Without discussing the form of organization employed for this purpose, it may be stated that these land mortgage institutions bring to European farmers low interest rates; the privileges of repaying loans in small fixed annual installments spread over a term or years —in some cases as long as seventy-five years under the amortisation plan, although provision for earlier payment is made if the borrower so desires; protection from advance in interest rates; and the practical elimination of commission charges. Many of these personal credit societies and land mortgage associations are fostered by Government grants, loans, or special provisions of law. Mortgage bonds issued by commercial banks and by private joint stock land mortgage banks sell substantially on the same basis with like securities issued by government favored institutions and both classes of banks are recognized as needful in the development and conservation of agricultural resources. In many instances private and commercial banks purchase the securities of land mortgage associations. Experience has demonstrated that such land mortgage bonds are liquid assets.

The systems of land title registration in countries possessing such mortgage institutions, practically prevent dispute of title upon mortgaged land. Provisions are also generally afforded these mortgage institutions which eliminate undue legal delays in the recovery of loans placed with defaulting borrowers. Savings and trust funds are frequently invested in securities of such mortgage institutions under sanction of law. Loans up to fifty or even sixty-six per cent are made on lands of dependable value and are considered safe and conservative, and compare favorably with provincial and government bonds.

The organization for production and distribution of farm products follows co-operative lines. Farm products are sold by the producer at a relatively higher price and are bought by the consumer at a relatively lower price because the cost of distribution is considerably lowered by co-operative marketing which results, also, in improving the quality and uniformity of farm products and in promoting more business-like methods in farming operations.

It is the opinion of many of the leaders of this movement in Europe that the question of rural credit ought not to be divorced from co-operation for business pur-

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poses and the general organization of community life in rural districts. In some European countries visited agriculture and country life interests generally are thoroughly organized and co-ordinated. The studies of the Commission emphasize the necessity of defining the functions, on the one hand, of government, and on the other of voluntary organizations in promoting the development of country life. In some of these countries great emphasis is placed upon the value of voluntary associations and such State aid as involves governmental control over the activities of rural organizations is deprecated as tending to stifle the initiative of the people.

Rural conditions, environment and temperament in Europe differ widely in the various countries from rural conditions, environment and temperament in America, as conditions differ in our several States and Provinces. Therefore, it may be necessary, in some cases, to modify these European systems if they are to be adapted to the needs of American farmers. At the same time, co-operative effort among the farmers of America might well be more generally employed, and the facts gathered should be of great value in developing methods suited to the needs of the farmers in the several sections, States and Provinces.

RICE IN CALIFORNIA.

To the Editor: I have been told you could give me information about rice growing in California, the profit per acre, cost of raising, etc. If so, I shall be glad to receive it.—W. M., Berkeley.

Successful rice growing in California is a matter of very recent development, though years ago rice was grown experimentally. Rice requires a hot growing season, a heavy soil and an abundance of moisture thereon. The best combination of those conditions appears to be secured in the north central part of the Sacramento valley, especially in western Butte county, and the results of the last two or three years has resulted in heavy plantings this year, said to be up in the thousands of acres. Rice growing apparently is not as profitable in the Gulf States as it once was, and what the profits will be here it is hard to say, as it has not been long enough on a commercial footing to demonstrate this, though its future looks promising. For details of culture from which you can judge of cost and methods of production, get bulletin on Rice Culture from Agricultural Experiment Station, University of California, Berkeley, sent free on request.

RHUBARB IN GLENN COUNTY.

To the Editor: Can you give me any figures concerning the cost of raising rhubarb for the market; also the profits? Is rhubarb raising practical on heavy clay land about three miles west of the river in Glenn county? Also, will you please tell me what the State requirements are for a dairy barn?—W. C. S., Glenn.

The whole proposition of telling what it costs to raise a ton of this or an acre of that is so difficult that it is almost useless. A person might take some standard crop, like alfalfa, and figure out the cost on average good soil, provided all the water needed was available at a certain cost, but when the crop is something like rhubarb, which requires intensive culture and produces so differently under different conditions, any generalizations can hardly be correct, or if correct, are very misleading if one attempted to go by them. The question of profits is still a wider one, for with every intensively cultivated crop there is an immense range per acre, from a net loss to a very big profit. Both the labor and other costs of rhubarb are rather high, as with all intensively farmed crops. You will find more very interesting material on rhubarb in the leading article this week.

A heavy soil is very suitable for rhubarb culture, so you are all right that way. The most suitable location for rhubarb, however, is nearer the coast, or where the climate is more uniform than in the interior. On the other hand rhubarb growing for local markets in the interior has proved very profitable and you can quite probably learn how to raise this plant profitably and sell to very good advantage by going at it by degrees.

The matter of State requirements for a dairy barn has been treated in the RURAL PRESS recently, as you have probably noticed, so need not be discussed here.

GUMMING OF PRUNE TREES.

To the Editor: I write to ask for information concerning my prune trees. They are from two to six years old and the gum is exuding from them. As I notice the branches dying I cut them out, but this doesn't seem to save the tree. I would appreciate any information you can give me.—W. S., Ukiah.

This is a pretty hard matter to diagnose from a distance. There is a good probability that the trouble is caused by sunburn, a point you could determine on inspection. Whitewash would be a protection against this and more or less of a cure also. Furthermore, borers may be the cause, which can be determined by examining the points where the gum exudes, seeing if any wood grains are present. These borers should be dug out and whitewash applied, which latter also protects against this trouble. Lastly, your ground may be drying out, which also you can determine and remedy. If you are still in doubt after making another examination, get Horticultural Commissioner Banks to investigate matters and suggest treatment. Sunburn, borers and unsatisfactory soil conditions are, however, the main cause of gumming.

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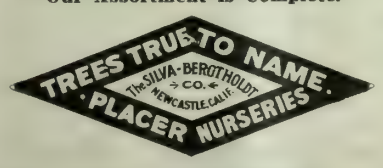

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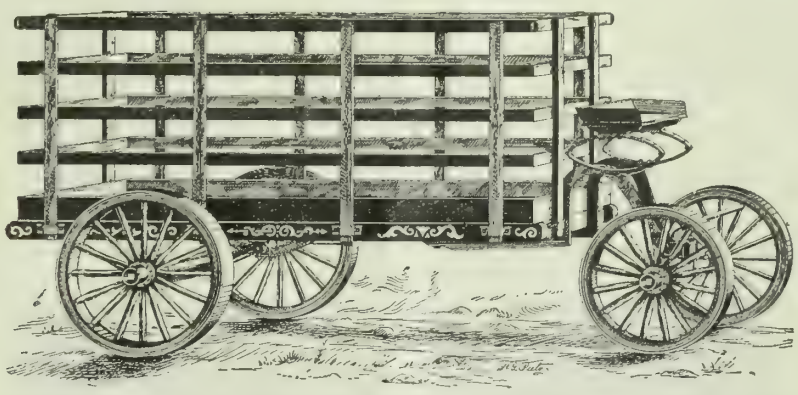

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How Eastern Berry Growers Co-operate.

While California is much farther along in the co-operative marketing of farm products than any other of the States, yet there are elsewhere some very fine examples of co-operative organizations. One of these in the Ozark Mountains, Missouri, markets strawberries and has achieved great success. It is told of in a Missouri exchange, which we quote in part. It will demonstrate why buyers like to get co-operatively marketed goods and why such associations succeed.

Strawberry growers at Neosho, Mo., sold their fruit on a rising market this year. The first car of berries was sold there Sunday, May 18, for $1.50 a 24-quart crate; the next day the price advanced to $1.65; Tuesday it was $1.75; Wednesday it was $1.85, and Thursday it was $1.95. It ranged around $1.75 much of the season. This was for the scant quart box; the full boxes ranged about 25 cents a crate higher. These prices were well above those of 1912, but were not quite up to the high standard of 1911.

The weather was favorable most of the time. The spring was remarkably backward, and the temperature through most of the picking season was rather cool and dry—but not too dry, except for a little while toward the last of the season. This allowed the berries to go on the market in a firm condition, and they were in splendid shape for shipment.

Neosho is on the Kansas City Southern and Frisco Railways, in the heart of the Ozarks, and the soil and climate are especially favorable for growing this crop. Most of the soil is a stony loam which is typical of the Ozark uplift—the rocks being so thick in some places that they almost cover the ground. Most of the farmers grow at least some strawberries, and many have a large acreage. Several cars a day—frequently as many as ten—are shipped from this town in the main season.

STRICT RULES ENFORCED.

There are three associations that ship the fruit at Neosho. All the cars loaded by these associations are iced by a local company, which does much of this work for the Kansas City Southern Railway. As the members of these associations know that the future of the business depends absolutely on the production of high-class berries, strict rules have been adopted, and they are carefully enforced.

Here are the rules used by the Neosho Fruit Growers' Association for 1913:

"Berries of the Aroma variety shall be colored all over with no green cast; the Bubach and Clyde berries shall be one-half or more colored, while the Haverland shall be from two-thirds to three-fourths colored.

"All berries must be clean, dry, of good form, and perfectly sound. The 'A' grade must be strictly choice, firm, sound stock of good size. The 'B' grade must also be firm and sound, but the berries may be somewhat smaller.

"The boxes, both top and bottom layers, in each crate must be well filled and nicely rounded, and every crate not having the boxes well filled will be rejected.

"All crates and boxes must be clean and well made, and the crates especially must be free from berry stains.

"Each crate shall have the shipper's name stamped on both ends of the upper left-hand corner. Under this shall be stamped the name of the variety, and if the grower is instructed by inspector to do so, the grade mark shall be put under variety.

"The berries should arrive at the shipping shed as early in the day as possible; and growers must do all in their power to prevent a rush at the loading sheds late in the day, so the cars will be loaded and ready to go as soon as possible.

"No grower shall be allowed to argue with the inspector over the inspection of his berries, but any member aggrieved may appeal from the judgment of the inspector to the business committee, or member or members of it present.

"If as many as two legitimate cases of dishonest packing or methods are made by the receivers after a car reaches its destination, no more berries will be handled by the management from the grower against whom the complaint is made.

"Growers must use every precaution possible in handling berries to avoid injury to them by bruising between the packing sheds and the loading point, and it is recommended that each grower shall see that the loose stones are removed from the roads over which he must haul the fruit. Even then the teams should be driven at a walk, and the load should be as nearly equal to the carrying capacity of the springs used as possible."

As a rule, most of the cars are sold before they are billed out, it being usually unnecessary to "set the cars rolling" without a sale. There were about ten buyers at Neosho for most of the season. Refrigerator cars are usually promptly available, for the Kansas City Southern, Frisco, Missouri Pacific and the other roads of that section make every effort to give the growers good service. The intelligent co-operation of the railroads with the growers has done much to develop the fruit business in the Ozarks.

The berries are inspected twice, the first time in the field sheds, where they are brought by the pickers. Here the berries are graded, and the undesirable ones are thrown out of the boxes. The crates are inspected by the representatives of the association at the loading shed. As a rule, there is no trouble with improperly packed boxes, for if a member is found guilty of anything of this sort, he is expelled from the association.

[It is the same with other co-operative organizations as with this. Everybody turns out a fine product and both buyer, seller and ultimate consumer prosper. A good product is the basis of all success.]

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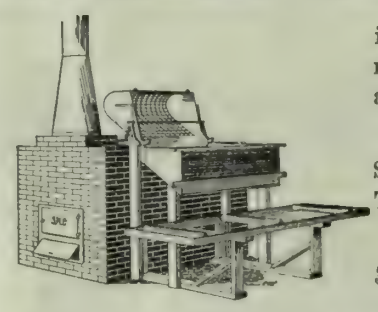

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Ukiah Farmer's Club Annual Barbecue and Picnic.

[Written for the PACIFIC RURAL PRESS.]

On Saturday, July the 26th, the third annual Barbecue of the Ukiah Farmers' Club was held in Clark's grove, two miles south of town. This grove itself is of considerable interest to the stranger. It stands in the midst of one of the richest tracts of valley land in California. On the south and west there are hop fields which yield an annual profit of from $100 to $300 per acre (last year about $170). On the north there is a corn field that would be a credit to our greatest corn growing States. On the east there are grain and alfalfa fields which annually return bumper crops, and all this without any irrigation. These fields are in the highest state of cultivation and the tall grove of California pepper trees (laurel), standing in their midst, towering high in the sky with an immense green dome, made an impression on the visitor, long to be remembered with pleasure.

As we rolled down the beautiful valley road leading south from Ukiah, our attention and admiration was completely absorbed by splendid orchards of prunes and pears, fields of alfalfa which yield four cuttings per season without irrigation, tall waving corn as green and luxurious as one could find anywhere, and the great hop fields which have completely covered their trellises and are now beginning to drop down the long festoons of young "beer blossoms," our machine came to a sudden stop and we were aroused from our contemplation of this wonderful land, to find ourselves gazing out of the side of our auto at—roast beef.

Yes, roast beef, pork, mutton, goat and deer,—a ton and a half of it. Our driver had suddenly turned out of the land into the field on the east side of the grove and there was a trench in the ground, covered with roasting meat. The trench was forty feet long. The bottom was alive with glowing coals of fire. The meat was cut in quarters and halves and just ready to serve.

The grove was another surprise when we stepped inside. It is completely surrounded by a hedge of undergrowth which shuts off any view either out or in. The inside is completely clear and tall pepper trees stand in clumps with no limbs until very near their tops, where they branch out in great plumes so thick that the sun is completely shut out.

In the center of the grove is a well of good cool water, but beside the well were two barrels full of lemonade with an attendant to keep them that way. Dippers and cups for everybody, and the choicest of lemonade just as free to everybody as the water in the well.

A little to the left were many seats of planking, and a speaker stand all decorated in national colors. To the right was a registration booth with a man in charge to give information and take names. Just beyond were long rows of tables, several hundred feet of them, and all decorated out in stars and stripes. Ladies everywhere were spreading cloths and placing pans, plates, boxes, and packages of all those choice eatables which are made better by the prosperous farmer's wife than by anybody else in the world. No imitation here,—all is genuine, choice and the richest in the land.

Pretty soon a dozen men in white aprons and carrying long knives start for the trenches and we know "dinner is ready." Next we see these men returning to the carving tables bearing on their shoulders the rich brown quarters of meat, pierced through by long steel rods. Next there is the sound of "butchers' steels," bright blades are gleaming, new pans are filling, waiters are running and down along the tables go the pans. And here come others with steaming pails of coffee. All the people line up to the tables, the band begins to play, everybody is talking and laughing, there are no strangers, the poorest man within our gates is brother to the richest, for we are one big family today—the Ukiah Farmers' Club and their guests.

As the people eat they keep moving and talking. A little here and a little there. You see the aim is to get acquainted. When we think we have enough we rest awhile and then eat some more. By the time an hour has passed everybody seems to be well acquainted with everybody else.

The band gave a very choice concert from 1 to 2 o'clock and then a program of speaking was called. The presiding officer, C. A. Bernhard, the Club's secretary, welcomed everybody, gave a short account of the aims of the Club and then introduced F. A. Bennett, manager of the Rochdale Wholesale Co. of San Francisco. Mr. Bennett's subject was an account of the beginning and growth of the Rochdale movement in California. He was the first manager of that little store, and he took the people along in a very interesting way from that little store with its $10 stock, kept open only a few hours on Saturday, up to the present standing where they have a large wholesale business of their own and supply more than half a hundred flourishing stores, some of them doing nearly a quarter of a million dollars worth of business in a year.

The next speaker was William McNaught, state president of the Farmers' Union. Mr. McNaught is a splendid speaker and spoke of the difficulties in the way of spreading the "Union" ideas in this State. He made a strong plea for the principles of co-operation in every possible way. The Ukiah Farmers' Club is a local organization, not affiliated with any other movement and the object in bringing Mr. McNaught was to instruct the people in the work of the Farmers' Union. There is considerable sentiment in favor of organizing Mendocino county for the Union and it now looks as though this will be done within a few months.

A few miles north of Ukiah is a beautiful little valley known as Redwood valley. A couple of years ago some new comers got together and the result was the Redwood Valley Improvement Club. F. A. Yates was one of the prime movers in this undertaking, and for this reason he was called upon at this point in the program to tell the people what had been accomplished. Mr. Yates proved a surprise to the people, first because he could make a speech, second because he had something to say and wasn't afraid to say it, and lastly because the Redwood Valley Club has made a great record. It has secured rural delivery where it was declared impossible, it has built telephones, secured new roads and bridges and now has on hand several other important undertakings.

The closing speaker of the day was E. O. F. Ames of the staff of the Pacific Co-operator. Mr. Ames spoke of co-operation in other countries. He has had five years experience in the work in Europe and his work was of exceeding interest.

After the speaking was over the people lingered to visit until late in the day. The weather was ideal. The time of year chosen gave everybody opportunity to attend. The crowd was estimated to be about 2000 persons and a more orderly, cheerful and happy crowd is seldom seen congregated. Truly it was a great day and the Ukiah Farmers' Club is to be congratulated for setting the example. May the time be short until every community will do likewise.

[The Ukiah Farmers' Club, Inc., told about here, is one of the shining examples of co-operative buying by farmers in California, probably the most noted one. It may do some co-operative marketing, but its main operations are to get what its members need at cost price. Co-operation in this way is just as much needed as co-operative marketing, which over much of California is a howling success and when the farmer co-operates in selling and buying and gets his farm finances properly conducted, he has pretty nearly arrived at the commercial millenium. The Farmers' Club appears to have pretty near solved one-third of the problem and the way the picnic is said to have gone off seems to show that they have been a wonderful thing in bettering community spirit.—EDITOR.]

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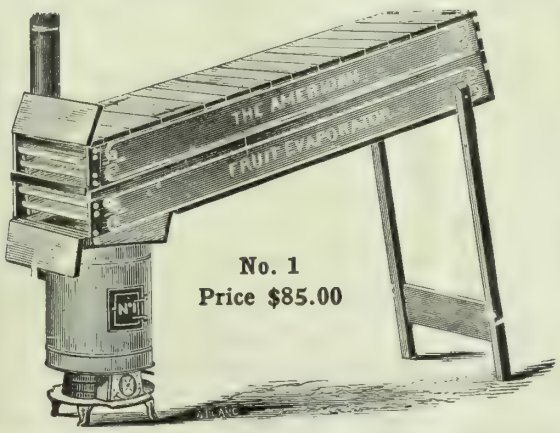

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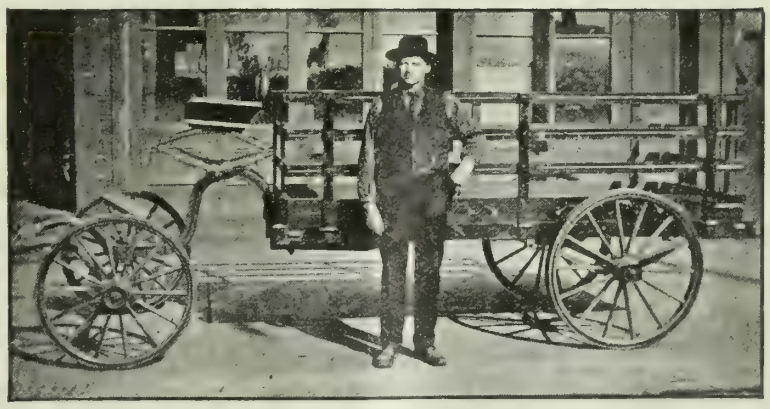

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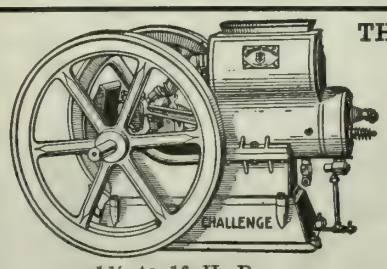

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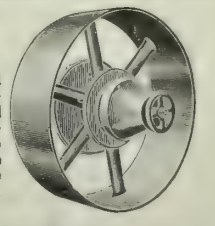

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AGRICULTURAL REVIEW.

With the Fruit Men.

The fig crop of the State is now estimated as being a little heavier than last year. Prices of 5⅜c per pound are said to be offered.

Peach shipping from the Buhach ranch near Merced is now on in full swing, and the crop is large. A fine crop of almonds is also in prospect on the ranch.

Last week watermelon-growers of Turlock received from $15 to $16 per ton. Melons are being sent out as fast as possible to take advantage of high markets.

J. H. Leggett, of Oroville, shipped the first lot of Tokay grapes for the season last week. The grapes were grown on dredged lands and were ripe a week ahead of any other section.

Reports from Fresno county are to the effect that the raisin crop will be shorter than expected. Before setting prices on this season's crop, the Raisin Association will make a canvass to ascertain the probable tonnage. Sales of the 1912 crop are being made on the prices recently set by the Association.

The Fresno Republican says that a shortage in the peach crop in the San Joaquin is causing some uneasiness to canners. Offers of $25 for orange clings and $35 per ton for Tuscans are being made. The red spider in that section is said to be causing loss to the peach crop that had not been expected.

A carload of Thompson's Seedless grapes from Mesa, Arizona, opened the season on the New York market last week. The car contained 770 crates and grossed $2,627.30. This week the first car of grapes from the Imperial valley will be sold on the New York market.

At a meeting of the California Associated Raisin Co. held last Saturday at Fresno, raisins were advanced a quarter of a cent and the capital stock of the company advanced from $1,000,000 to $1,500,000. The additional capital was made necessary by the increase of business.

At the meeting of the San Jose Grange last Saturday the committee on markets reported that prunes were selling at 4⅝c, apricots 11½c, and peaches at 4c. These prices are higher than offered last year, but the shortage of fruit will induce many growers to hold for a higher price.

A large pre-cooling plant is announced for San Pedro soon. The principal use for the plant will be to handle citrus fruits outbound and Australian beef coming in to that port.

Agricultural Notes.

The acreage planted to Lima beans in the southern counties is larger this year than last, and at this time the prospects are fine. Owing to the high prices that have obtained for some time, quite a quantity of limas are coming into California from the Orient.

A dispatch from Lodi states that the tomato crop is large near there, and part of it has already been marketed. Owing to the early ripening of tomatoes in that section it is thought a larger acreage will be set out there next year.

The Petaluma Incubator Co. is fixing up a building at Hayward to be used as a chicken hatchery.

P. D. Bane, of Orland, recently stated that as a result of the Government irrigation project there, enough alfalfa would be cut on the land benefited to pay its cost this year.

Hop picking is now in full blast in the Sacramento valley, and as the work progresses the crop is found to be a little heavier than had been expected. Prices are now firm at 15½c per pound, with most of the crop contracted. The Oregon hop crop is estimated at 120,000 to 130,000 bales, and prices there are about 17c per pound.

The International Institute of Agriculture, Rome, Italy, places the wheat production of the world this year at 100.2% of last year's crop. Of rye, it states that the crop will be 92.4% of last year's. Of barley, 92%, and of oats, 80.8% of 1912.

With the seven southern California counties—Los Angeles, San Diego, Riverside, Orange, San Bernardino, Imperial, and Ventura—making a joint exhibit at the State Fair, it cannot be said that the Fair boosts only the section north of the Tehachapi. This year's Fair will be representative of the entire State,

J. W. Atkinson, general manager for the Alameda Sugar Co., estimates the production of beet sugar in California this year at 175,000 tons.

Modoc county has raised a good crop of hay and grain this year. Most of the hay has already been sold at $8 and $9 in the stack.

The rice crop in the Richvale, Butte county, section is further advanced than usual at this time, and will be harvested about a month earlier than last season.

A poultry association was organized at Coalinga last week with 25 charter members. It is proposed by the association to help its members market eggs, also to hold a poultry show some time the coming season.

Land Improvements.

Work on the Modoc irrigation project on the Klamath Indian reservation will be pushed as fast as possible, now that the Government has appropriated $155,000 for the purpose.

A contract for the building of a concrete dam on Butte creek, above Chico, was let last week. With this work completed, there will be several thousand acres of dry land on the Parrott and Phelan ranches placed under irrigation.

C. H. Sessions, of San Francisco, has completed the work of installing over 200 centrifugal pumps in the vicinity of Marysville and Yuba City. These pumps were all from the Krogh Mfg. Co.'s plant and will be run by electricity.

F. M. Cale, of San Francisco, has purchased a 1900-acre tract of land in Brown's valley, near Marysville, which he expects to set out in great part to alfalfa.

The first of a series of pumps of the Mt. Shasta Land and Irrigation company was started recently and is now lifting 400,000 gallons of water per hour 56 feet high. The company will furnish water for the irrigation of several thousand acres of land in Siskiyou county.

Notes From Santa Clara County.

The extreme hot spell of July 10th, 11th and 12th caused considerable damage to the fruit through Santa Clara Valley. This was especially noticeable in the sections where there had been no irrigation, and as a consequence the foliage on the trees in a good many instances was very light. The sections that suffered the most were Campbell, Los Gatos, Berryessa and Almaden.

In these sections, as near as we could estimate, the loss to the prunes averaged 10 to 25%. Blenheim cots were badly burned, but the Morparks, owing to a very light crop and very heavy foliage, were scarcely touched. Pears were also badly burned in a good many sections, and the red spider is doing considerable damage to the crop.

The fruit growers are finding out a good many things about pumping plants and irrigation this season that they have never known before. One of the most important is that the best time to irrigate an orchard is in the late fall and early spring. From then on, deep plowing and good pulverizing will get the best results.

One of the best looking orchards that we saw in the valley was treated this way. It was thoroughly irrigated and cultivated last October anu the treatment was repeated last March and April. Since then not a drop of water has been put on it. We found the trees covered with luxuriant foliage, and loaded with fruit that was scarcely touched by the hot spell.

Where the tomatoes have had plenty of water a heavy crop is promised, and an unusually large acreage has been planted this year. The canneries are contracting for them, offering prices that range from $7.50 to $9 a ton.

In the Sunnyvale section we found orchards in better condition as a general rule. The frost of last spring seems to have missed this section and we found many orchards heavily loaded. Where they have been irrigated the prunes will be of good size. The apricots have been averaging up well, especially the Moorparks. One of the heaviest loaded orchards of prunes in the valley, we believe, is located on the Homestead road about 22 miles from Sunnyvale. Mrs. Woods, who owns the property, expects to get 60 tons of dried fruit from the 20 acres. The peculiar feature of the orchard is that in spite of the large crop the prunes are exceptionally large and will average about 60s for the orchard. Mrs. Woods accounts for the crop from the fact that she has given it plenty of water when it needed it and that the trees are all young.

The Sorosis Fruit Co., of Saratoga, reports a very good crop of prunes and apricots. The prunes will only run in medium sizes owing to drouth.

For the first time in the history of Santa Clara, the artesian wells have stopped flowing, and a great many have had to sink pits 35 and 40 feet deep and put in pumping plants to get water to irrigate with. D. L. SCHRADER.

Experiments With Barley.

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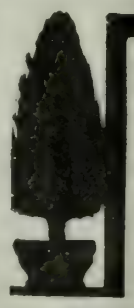
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largest grower of hops on this Coast, is also interested in the growing of barley, particularly of the brewing types. At its Wheatland farm, experiments have been carried on for some time in growing about 50 different varieties, the seed for which was secured from various parts of the world. Last week this company exhibited on the floor of the Merchants Exchange in San Francisco, the results of its experiments this season. Many of the varieties shown have done remarkably well, mostly from seed grown in the Eastern States, while many of the varieties which were grown from imported seed have not done so well, so that the company expects to confine future experiments to American seed. The work of the Horst company is worth much to grain growers.

Deciduous Fruit Crop Prospects.

In the PACIFIC RURAL PRESS of July 5th was printed a table and resume of the deciduous fruit crop prospects as they were at that time. At the present writing the prospects are not as good as then. Hot weather and dry soil have had the effect of cutting down most fruits from 10 to 20 per cent during the past thirty days. Prunes and grapes have perhaps suffered more than the other fruits, but pears, peaches, plums and apricots were also affected.

The fine part of the situation, for some growers at least is the higher price being secured for fruit. While shipments of green fruit will be much smaller than last season, yet the receipts are likely to total more for the short crop than for the big one of 1912. So far fruit has sold in the markets, both east and west, for more than 20 per cent higher prices than last season, and the prospects are that these prices will continue to be in excess of those paid before.

The Sacramento valley generally will have a fair crop season, though the heat damage may finally result in greater loss than now anticipated. In the delta sections around Stockton and Sacramento the fruit crop on the low ground will be very light owing to frost damage. On the higher places in that section good crops are being harvested. In the San Joaquin valley grapes and peaches will be much less than last year, loss being sustained from frost, drought and heat. However, the loss is compensated to some extent by the good prices being paid for wine grapes, peaches and other fruits, and the expected good prices for table and raisin grapes. In the Santa Clara valley the prune crop will run about half that of last year and it is ripening fully two weeks earlier than usual. Peaches and apricots will be light. In the north of the Bay counties if frost had not affected the fruit the crop would have been fine. In spite of the loss we believe growers of prunes, grapes and pears will have a fairly good financial season. Apple growers around Sebastopol are harvesting a fair crop of Gravensteins and are receiving very good prices. Watsonville apples will be short, but there will be more apples harvested there than the estimate of a month ago of 20 per cent of last season's output. Some estimates now place the Pajaro apple crop at from 1,000 to 1,200 cars.

In the southern counties the crops are about the same as reported last month. However, the walnut crop will be a little better than expected as the blight and aphis have done but little damage.

THE ALMOND OUTLOOK.

In an interview with T. C. Tucker of the California Almond Association last week, he estimated the almond crop at 1,750 tons, as against 3,500 tons last year, or a half crop for the State. In the Banning section the crop will be full, while in the Lancaster district the crop will be fair only. There is almost a failure in San Joaquin county owing to frost, while in the other districts there will be about half the usual harvest. Another feature that may cut down the shipping total will be the larger number of "sticktights" owing to dry season.

A meeting of the directors of the Association will be held at Sacramento within the next week or two to set the price on almonds for this season's crop. Already orders, subject to price, have been received by the Association to take more than double the crop, but what the price will be no one can say. Last year the price to start with was 14, 13½ and 12½ cents, but this season the figures will doubtless be advanced several points.

DRIED FRUITS.

Manager J. P. Dargitz of the California Cured Fruit Exchange, stated to the writer a few days ago, that in his judgment the prune crop had been damaged 20 per cent during the past month. Peaches will be comparatively a light crop, and owing to heavy contracts being made by canneries and the good prices received for fresh fruit, the tonnage to be dried will not be over one-half of that of last year, which was in the neighborhood of 25,000 tons. He predicted an advance of one cent a pound for dried peaches within a month's time. Regarding apricots he thought that the bulk of the crop would be moved at from 10 to 12 cents per pound.

The Cured Fruit Exchange is apparently getting on its feet and will do good work this season. Already the parent exchange has seventeen local associations affiliated with it, and it has done a business of over $1,000,000. Recently the equipment and lease of the Castle Bros. packing house on Front street, Sacramento, was purchased by the Sutter and Acampo Association, who will operate it this season. The general Exchange has moved its offices to the building and is now in good shape to handle a large volume of business.

ASK FOR COOK'S REMOVAL.

A meeting of fruit growers and several County Horticultural Commissioners was held at Sacramento on Thursday of last week to discuss the matter of a change in the State Horticultural Commission. A committee from the meeting waited upon Governor Johnson to request a hearing of charges preferred against Dr. Cook. The Governor set Wednesday, August 13th at 10 a. m. as the time to present charges and at that hearing Dr. Cook will be given the opportunity to defend his administration.

The meeting at this time of the fruit men came about over the growing distrust of Dr. Cook's methods, and as far as the men were concerned there was no personal feeling in the matter. It will be remembered that at the fruit growers' meeting held at Santa Barbara a year ago, a petition for Dr. Cook's removal was signed pretty generally by those in attendance, also a welfare committee was selected to present the matter to the Governor. Owing to a press of other matters at that time the committee though best to hold up action for the time, but the old feeling has not died out and as more mistakes have been occurring since the committee was appointed, it is now taking the lead in this movement.

We believe that insofar as the growers are concerned that there is no feeling of personal nature in the movement, the sole object being to secure more efficiency in the office, which the fruit men consider the most important of any in the State. As to who should be appointed to the position of State Horticultural Commissioner, should a change be made at this time, the matter was not discussed was such a suggestion offered.

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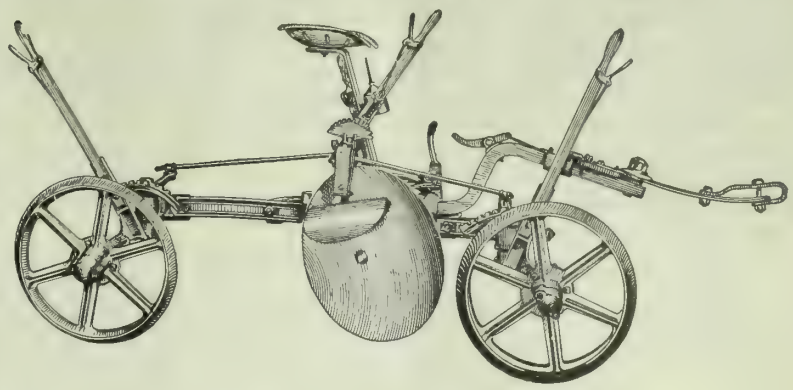

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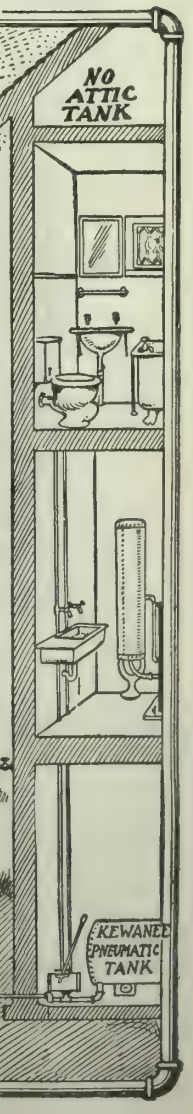

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Breeding California Shropshires.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

We often see instances where individuals or companies are doing big things in this or that line but to find such people who are doing big things in all lines and at the same time materially benefiting the State is out of the ordinary.

That there is such a company in California that is accomplishing the above mentioned results may be seen from a visit to Bishop Brothers' ranch at San Ramon, Contra Costa County.

Unlike any other large undertaking in the State, sheep were selected to carry the honors of the ranch with horses, dairy cows, grain, hay and orchards as a side issue, so to speak.

Perhaps the plain word sheep does not convey the meaning strong enough, for the animals going under that name on this ranch are greatly superior to what Californians have been accustomed to seeing in the Shropshire breed.

That this opinion is not based entirely upon our own views may be seen from the number of championships and first prizes which the flock has been given by Fair judges at Sacramento, Portland, Salem and Boise.

To get back to the ranch as a whole though, there are 2640 acres in the San Ramon valley ranch, which is by wagon road about 25 miles from Oakland. This may be another noteworthy fact, that such an achievement is being accomplished so near the metropolis of the State.

Of the 2640 acres 1100 lies in the valley and might be called bottom land, the balance is hill land but unlike a great deal of the hill land in this State it is most all cultivated and produces good crops of grain hay.

The ranch for years was run as a grain and cattle establishment but for the past few years a revolution has taken place and at the time of our visit there were 1400 head of sheep, 300 head of hogs, 150 head of horses and 60 milk cows.

Champion Ewe Salem and Spokane Fairs 1912.

Flock of Ewes on the San Ramon Ranch.

Four of Bishop Bros.' Lambs.

Instead of farming all of the bottom land to grain as before, there are 150 acres planted to a young Bartlett pear orchard, 100 acres to English walnuts grafted onto California black roots, 100 acres to peas and about the same amount to Indian corn, besides a good sized acreage of beets and kale. The future plans of the owners are to farm all of the bottom lands to fruit or other summer producing crops and to use the hill lands for pasture and hay lands. With the sheep as a headliner this hill land is very valuable and by having bottom land which will produce supplementary feeds the location seems to be ideal.

Although most every end of the ranch would afford an interesting story and might be said to be big, yet the truly big feature for both the Bishops and the State is the sheep.

To give a brief review of that end, grade sheep were raised for a good many years as a by-product. Six years ago the first purebreds were purchased with the intention of starting a Shropshire breeding establishment second to none in the United States and comparing very favorably with the best flocks in England.

Since the upbuilding of the flock has been under way no expense has been spared when purchasing stock. At first efforts along this line were confined to purchases from the best breeders and importers in this country and when the highest standard that could be obtained here was reached trips were made to England with the end in view of purchasing only the best individuals obtainable.

Although both the owners and Mr. Rutherford, the superintendent of the ranch, are good judges of what a high class sheep should be, with so many other interests it was decided to hire a high class shepherd, so the services of Ted Ballard were acquired. Those familiar with the sheep industry know of the ability of Mr. Ballard, but for others it might be said that he has been connected with some of the best breeders both in America and in Europe, among them being Frank Harding and Rink in this country and Cavendish, the leading English breeder.

That his services have been worth a great deal is shown by the fact that through purchases, which he has made, and which have been used as sires and dams, the young lambs on the ranch have every indication of being better individuals than any before kept, and if it is possible to breed better sheep on this ranch than can be purchased elsewhere in this country we have brought out one point of our claim that this company is benefiting the whole State.

While there are 1400 head of sheep on the ranch, only 100 head of ewes, part of the lambs, and the bucks are registered, but the others, which are classified as grades, have been bred up by the use of registered rams until it is difficult to see any difference in the two flocks.

Some may consider any sheep undertaking at the present time, with the wool tariff in the air and a general change in sheep condition, to be somewhat of a gamble, but it is due to these two circumstances that the Shropshires and especially the kind being grown on this ranch will most likely make rapid strides in the future.

Of course this breed is not so much affected by the tariff revisions as Merino and other wool breeds but we were told that the wool clips from this flock bring the highest prices and that the wool crop pays for the feed and care. In one respect the Shropshire might be called a Democratic sheep, for many large sheep men who have heretofore ran wool sheep are this year turning to mutton sheep.

The chief condition warranting such an expenditure in purebred sheep, however, is due to the fact that from this time on the sheep industry will be carried on by the smaller rancher, sometimes as the main factor but more generally as a by-product such as is done in the East at the present time. Along with this new era in sheep raising will come a demand for a dual purpose animal and as farmers are rapidly learning the value of highly bred stock they will also soon learn the need of having well bred sheep.

The flock sire question might be properly compared with the herd boar in the hog lot as far as prices are concerned, ranging from $15.00 for well bred grades to $50.00 for purebred. With a small additional cost then, for the purebred sire, a higher quality lamb could be raised at an additional cost of about 15 cents apiece, figuring that the ram was used for 4 years.

At this point we might point out another circumstance in which Bishop Brothers are aiding farmers in this State, for while they are importing rams and ewes at considerable expense they are distributing the offspring at very reasonable prices in order to demonstrate the efficiency of the better bred stock and if there is one thing farmers need more demonstration on it is this one.

That sheep may be profitably run as a by-product even on a good sized scale, may be seen from the methods used on this ranch, for although 1400 head are kept we were told that as much

acreage is farmed as before and that the same amount of other stock is maintained. This is accomplished by using the sheep as cleaners up of all the grain stubble after harvest and by running them on land which is laying idle to take the place of summer fallowing. About the only added expense in the way of equipment is a building indistinctly outlined in one of the pictures shown here.

These buildings are erected at one end of a paddock containing perhaps 5 acres of ground and are only used for the sheep during lambing season. They hold 50 ewes with lambs and we were told that by keeping the ewes in these paddocks for a week after lambing the percentage of loss among the lambs was very small.

One large building formerly used for a barn and located some distance from the paddocks but close to the sheep pasture affords a good housing for the lambs over a week old.

The show flock gets the same care as the grade flock, except when being prepared for the fairs, at which time they are housed in a cool shed, bedded with straw and fed, among other thing, beets and kale. A silo was erected a year ago and the corn ensilage is said to be a great feed very much relished by sheep.

As we said at the start of this article, big things are being done on this ranch, in fact most too large to be properly described in one article, but in concluding we wish to state that the Bishop Brothers have been doing and will continue to do a great work not only for the Shropshire breed but for the farmers of the State.

Market Milk at the Exposition.

[Written to the PACIFIC RURAL PRESS by J. C. LOOMIS.]

One benefit to be derived from the Panama-Pacific Exposition in 1915 which we have heard very little of will be in supplying the milk and cream trade of San Francisco for that year.

If there are any products of the farm that will be in demand during the Fair it will be these two, and what is still more interesting for those situated near enough to transportation facilities, they are products which cannot be supplied by outside districts, which fact thereby gives almost a monopoly to those dairymen who are so equipped to meet the requirements of city milk inspectors.

Just which districts will be able to participate in this rich market is hard to say, but a few of those in mind are the west side of the San Joaquin valley, the island dairies along the San Joaquin and Sacramento rivers, the dairies in Napa, Sonoma, Marin, Santa Clara, Alameda and San Mateo counties, and that portion of dairy land between Benicia and Davis in Solano and Yolo counties. While there may be other districts suitably located, those mentioned stand out more noticeable.

Just what prices will be realized for sweet milk during the exposition is only a matter of guess work at present, but the fact remains that there will be a big demand which will materially affect prices, and also that dairymen in those districts should begin to prepare for the trade.

By this we mean wherever a dairyman is building or expects to build new barns, milk houses, etc., he should carry in mind the requirements of the city milk inspection and build as near to the regulations as possible. None of these regulations are so strict as to hinder one from making money from butter fat production in case that method is preferred from now until fair time, and if they are properly erected now no remodeling will be necessary later on.

To illustrate: last week we visited a dairy which was being started with the intention of selling butter fat for the present, but to be turned into a city milk dairy later on.

Although having good intentions and wanting to turn out a sanitary product this man had not taken the trouble to look very far into the future, as was evidenced by the barn he was building at considerable cost.

The plans of this barn were the same as a great many seen all over, with high gable roof in the centre and shed roof on each side for milking purposes.

The first mistake made with this barn for San Francisco milk trade was that no provision was made to separate the hay from the milking space, a point which the law requires, or else have the milking barn separate from the part where feed is stored.

A great many other smaller details on the place were radically wrong for the desired purpose, but the barn was the largest direct loss as cement floors and gutters had been installed, also stanchions, and after all of that expense, if he sells city inspected milk, a new milking barn will have to be erected. The barn room itself is not wasted as he can use it for a feeding barn, but this could have been more cheaply constructed with a roof and feeding racks in the corral.

Such instances are not uncommon, and it would seem that when much money is being spent for improvements it would be well to so build that one could comply with the city regulations in a short time and with very little extra cost.

Even with sweet milk and cream at present market prices, dairymen find that it pays to ship to the bay cities' markets, and with the higher prices which are almost sure to come, the business will be still more profitable later.

A booklet called Sanitary Code, issued by the San Francisco Board of Public Health, 1085 Mission street, San Francisco, contains the law on this subject and may be had for the asking. We understand that a revision of the present ordinances is now being made, but will not be in force until some time in the future.

FILLING THE SILO.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

From now on until early frosts will be silo filling time for those who are fortunate enough to have a crop of corn and a good silo.

There are almost as many methods used in filling the silo as there are varieties of silage crops and no doubt the conditions in different sections will always warrant a little difference in methods although the main points will be the same.

As silos have been in use near Petaluma for the past 17 years they have, through experience, learned the best methods for their district and in the main they are the same as those used in other parts of the State.

The field cuting, in this section, is done differently than in some other places as was noted in our May 24 issue. The corn there is cut with short-handled hoes, the cutting being started about half a day before the silo filling starts. As the corn is cut it is thrown into piles, with the tossel ends all one way. Wagons with ordinary hay racks are used for hauling to the machine, one man handing the stalks to the driver of the wagon who loads his wagon in such a manner that the cut ends are all on one side. This is done to facilitate handling at the cutter where the butt ends are put in first.

To go back a little with our story though, it should be said that there are two stages in the growth of the corn which should be avoided for silage; first it should not be cut too green, in which case much of the growth and nourishment are lost, nor should it be allowed to begin to die, for in the latter case moisture has to be supplied at the time of filling. On this point John R. Denman's experience near Petaluma is valuable, his practice being to cut the crop when the kernel is just past the milky stage and beginning to harden.

The cost of the field cutting in this way is about 30 cents a ton with labor at $2 a day and is thoroughly practical for growers in any district, especially where the corn is planted on loose soil which is apt to badly clog up a corn binder or other mechanical cutter.

Two men usually handle the cutter and engine taking turns in feeding the cutter. Inside of the silo two men are also necessary where a large cutter is used, their duties being to direct the blower spout to the desired place and to thoroughly tramp the outside edges, the last duty being one of the most essential points in silo filling. In starting at the bottom the corn is evenly distributed over the entire bottom until it has been built upon perhaps a foot high, then the spout is turned around the outside edge and the man handling the spout packs down the edge with his foot, the other man follows up with the tramping, catching all spots left. When the outside has been built up in this way for 3 or 4 feet the spout is turned into the center and left there until the center is built up to about 3 feet high. The center does not need any tramping as it will pack itself sufficiently with corn. The spout is made in sections so that a section may be taken off from time to time as the filling goes on.

While some may think that there is not enough work in the silo to warrant hiring two men, in view of the fact that they don't have to work all the time, a little extra expense in this respect will more than repay one in the long run.

Before filling one other precaution should be taken and that is to have all repairing such as stopping up any air holes done and also to see that the doors all fit snug and will not allow any air to circulate around them.

When the filling is completed, a good practice is to top the silage with some mulch such as dry hay or other vegetable matter. This keeps the air from the silage and keeps the top layer from spoiling.

When the corn is harvested at the proper time no water need be added, but in case it has become a little too ripe some prefer to have a stream of water, run in with the corn, to supply enough moisture to aid the fermentation, necessary for good ensilage. The hired help problem is usually overcome in Sonoma County by the old grain threshing practice of trading work back and forth, but it is this labor problem which is the chief drawback to the above silo filling practice, for the man who is the only silo owner in a district, for it is hard to hire the cutting done by hand where only a few days' work can be offered the laborer.

It is for that reason that any one owning a silo is almost compelled to use mechanical means of harvesting the crop. Where the corn has not grown too rank an ordinary hay mower is sometimes used very successfully and saves the added expense of purchasing a corn binder.

After the present year silo owners will no doubt be able to supply experiences from most every section of the State, judging by the large number of silos which have been built, but these will likely be of minor importance.

In concluding, it might be said that the biggest silo problem is in realizing the need for more of them and any one who has a well built silo and a crop of corn to fill it with should not spend too many sleepless nights over the filling operation.

GRAPE POMACE AS HOG FEED.

To the Editor: Please state the value of grape pomace as a hog feed.—Subscriber, Turlock.

If you want a definite statement of value you cannot get it, because it would be practically impossible to conduct any tests that would give more than a very rough idea of what grape pomace is worth as a hog feed. It has been sold for 50 cents a ton as it comes from the press at the winery and when a person has not got any surplus of other feeds, it is evidently worth that and then some. The only way to feed it is to put it up in a big pile and let the hogs take it as they want it. It will keep them growing more or less through the winter provided they have other feed with it that would not be sufficient without the pomace. The pomace has also a fertilizing value, judged by what would have to be paid for the plant foods contained therein if purchased in chemical fertilizers, of between $3.00 and $4.00, so it looks as if there might be a better use made of pomace than to feed it to hogs, unless all that was left in spring was gathered up and distributed over the fields and the manure saved also. Grape pomace as a feed cannot be considered of much value, therefore.

As compared with the grapes themselves pomace contains 5 to 6 per cent nitrogenous matter, grapes a shade less than 1 per cent, that is digestible, while the former is only slightly digestible. Grapes contain about 17.75 per cent carbohydrates, or sugars, starches, etc., and pomace practically nothing, but 1 to 2 per cent alcohol, formed from fermented carbohydrates.

Breeders' Sales.

We wish to call the attention of pure-bred livestock breeders to this column. Sales of pure-bred stock of all kinds will be reported here, free of charge, providing we are supplied with the animal's name and registration number, buyer's name and address. Below are the sales reported to us for the past week.

HOLSTEIN CATTLE.

A. W. Morris & Son, Inc., Woodland, California, report sales as follows: To J. T. Thompson, Parkfield, Aralia Burke De Kol 96601; Vorden Ranch, Vorden, Aralia De Kol Acme 96602, and King Mead Acme 87198; Elcasco Land Co., Elcasco, Leda Tiettie Alcartra Korndyke 90360; Geo. H. Sullivan, Weed, Mirtilla Korndyke 90365; Nevada State Hospital, Reno, Nevada, Leda Korndyke Hengerveld De Kol 90364; J. M. Schieber, El Centro, Westside Mayflower Prince 2d., 104100; State Institute for Deaf and Blind, Berkeley, King Hengerveld Lyons 90772; J. N. Fulmore, Ferndale, Creamcup Meditation Cornucopia 109877; W. H. Meek Estate, Hayward, King Hiske De Kol 96600; Herman Krusi, San Lorenzo, Starlight King De Kol 106517; Lewis Bros., Loyalton, Natula Sir Korndyke 97098; Chas. F. Winter, Tancred, Bull calf; Good Templars' Home for Orphans, Vallejo, Sir Clifden Korndyke 106585; Spreckels Sugar Co., Spreckels, Sir Woodcrest Von Hengerveld 2d. 113095; Pete Peterson, Gustine, King Starlight De Kol 106516; R. S. Dahlberg, Murphy, Oregon, Sir Natula Korndyke Alcartra 90367; Will Eakle, Woodland, Sir Fayne Hopland 109881; J. N. Craig, Kern, Aralia De Kol Segis 106577; Pacific Portland Cement Co., Cement, Prince Tritomia Walker 106475.

L. A. Hall, breeder, San Jose, to C. Darnell, Browley, bull calf, El Prato Colantha Wayne; M. Santos, Ceres, bull calf three months old; Mrs. Knott, Mayfield, yearling bull; E. L. Emerson, Mountain View, yearling bull.

T. J. Gilkerson, breeder, Lemoore, to J. A. Kloniger, Lemoorre, bull calf, Stratford Berly Wayne Black Beauty 113643.

Robt. Kimble, breeder, Lemoore, to Nesbit and Son, Lemoore, the bull Consuela Juliana Lad, grand champion Kings county Fair, 1911.

BERKSHIRE HOG SALES.

E. C. Rand, breeder, Santa Rosa, to D. B. Walls, Petaluma, two young sows.

California Nursery Co., Niles, six to James Rolph, Jr., Mayor of San Francisco; ten to Odd Fellows' Home at Los Gatos; two to Chas. G. Keehner of San Francisco; three to Thos. Gregory of San Francisco, for export to Nicaragua; two to Franklin A. Zane, Redwood City; a sow and three pigs to Geo. A. Murphy, Perkins.

ADVERTISING AND STOCK SALES.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Although we do not wish to talk trade in these columns, there is one point in the pure-bred breeding business of this State at present which apparently is being overlooked.

Our reasons for this belief are based upon instances we have seen while visiting breeders in different parts of the State, where a man would have several fine looking pure-bred animals which he was having difficulty in finding a market for at reasonable figures. Sometimes in this breeder's own county we would find another man who was wanting just such stock but did not know where to get it.

While talking with a very successful live-stock commission man, we asked him what, in his belief, was the reason for this condition and his reply was in condensed form, "Advertise." He further stated though that his trade was rapidly growing simply because he let the public know through farm papers that he could supply them with stock.

After looking over the list of successful breeders of the State and noting their methods, we found that almost invariably they do advertise and also keep it up whether they have a great deal of stock or not, the idea being that the prospective buyer is looking ahead to the time that he will be ready to buy and when that time comes the advertiser whose name

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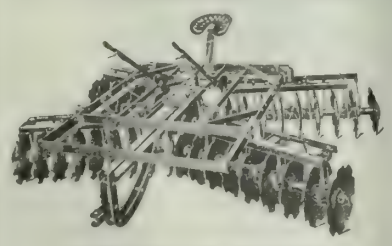

"IMPERIAL" Double Action Engine Disc Harrows

Strongly built, simple in construction, easily operated.
It isn't a question of whether you can afford one, but whether you can afford to do without one.
Write for Prices and Catalog.

THE H. C. SHAW COMPANY
Stockton, Cal.

Wholesale Distributors.

DE LAVAL CREAM SEPARATORS

Save Much Time and Labor in Summer

BESIDES greatly increasing the quantity and improving the quality of cream and butter DE LAVAL cream separators save much valuable time and labor.

This great saving of time and labor counts for more in summer than at any other season and often alone saves the cost of a separator, aside from all its other advantages.

As compared with any kind of gravity setting the saving of man's time and labor and usually woman's drudgery with a DE LAVAL is a big item in its favor.

As compared with other separators the DE LAVAL saves much time and labor by its greater capacity, easier running, easier handling, easier cleaning and freedom from need of adjustment or repair.

These are merely some of the advantages which make a DE LAVAL cream separator the best of all summer farm investments, as every DE LAVAL agent will be glad to explain and demonstrate to anyone at all interested.

See the nearest DE LAVAL agent **at once** or if you do not know him write us direct for any desired information.

DE LAVAL DAIRY SUPPLY COMPANY

165 Broadway NEW YORK — 101 Drum Street SAN FRANCISCO — 1016 Western Avenue SEATTLE

THE PACIFIC SILO

Build it Yourself At a Price You Can Afford

These years of small production make a silo a more absolute necessity than ever before. The saving in feeding cost that is effected by a good silo will soon pay its cost. That's why a silo is the best investment you can make.

The **Pacific Silo** will suit your needs best. It is built of solid concrete and particularly designed to meet the climatic conditions of the Pacific Coast. It will last a life-time and never requires repairs, painting or adjustments. The Pacific Silo of solid concrete need cost you no more than a wooden affair.

It will tell you how to build a PACIFIC SILO as successfully as we can. Our methods are a proved success. Drop us a postal today for co-operative plan A.

DELTA CONSTRUCTION CO.
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Freeport Gasoline Engine

The Engine of Perfect Design and Simplicity.
Everybody's Favorite.
Is Operated either with Gasoline or Distillate. Fully Guaranteed to Give Entire Satisfaction.
Built on modern lines—sizes 1½, 3 and 5 Horse Power.
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for every service and use.

National Centrifugal Pump

has ring-oiling bearings. It is fitted with one inside and one outside bearing between the pulleys, keeps runner in perfect alignment, doing away with friction and preventing bearings from heating. Long packing box. Guaranteed, modern up-to-date. We also carry the largest line of *Wind Mills, Tanks, Pipe, Pipe Fittings, Hose, Brass Goods, etc.*
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33-41 Fremont St., San Francisco, Cal.

DAIRY CATTLE.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St. ,San Francisco.

CHAS. L. LEONARD, Jacinto, Glenn Co.—Registered Jersey service bulls, sired by Gerties Lad, Gerties Son, and Melias Fox, for sale.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

MINOR & THORNTON, Breeders of Reg. Holstein-Friesian cattle. Kearney Park P. O., Cal.

REGISTERED JERSEY CATTLE.—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

REGISTERED HOLSTEIN bull calves for sale. H. W. Hawkinson, Perris, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SWINE.

REGISTERED BERKSHIRE BOARS, sired by Silver Tip Duke and Third Masterpiece. V. A. Peterson, Blacks Station, Cal.

REGISTERED DUROC JERSEY SWINE Some extra good young boars for sale, ready for service. Best Eastern strains. Ed. E. Johnson, Turlock, Cal.

REGISTERED BERKSHIRE SWINE—Best Eastern strains; bred sows and spring pigs for sale. A. B. Humphrey, Mayhews, Sacramento Co., Cal.

REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sole. Immediate delivery. Jno. F. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

350 BIG TYPE MULEFOOT HOGS for sale; they are the best for the Pacific Coast. John Dunlap, Williamsport, Ohio.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroughbred Berkshires.

FAIRVIEW STOCK FARM—Reg. Poland-China hogs. W. A. Young, Lodi.

CHAS. GOODMAN, breeder of High-Class Berkshire Swine. Williams, Cal.

E. C. RAND—Registered Berkshires. R. 3, Box 69, Santa Rosa, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Jersey cattle, Poland-China hogs. Young stock for sale. Chas. N. Odell, Prop., Modesto, Cal.

BRAE BROOK COLLIE KENNELS—Line bred tri-colors. Working prize stock. R. F. D. 69, Santa Rosa, Cal.

JERSEY CATTLE, DUROC JERSEY SWINE. Mossdale Farm. J. E. Thorp, Stockton, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire Hogs and Jersey cattle.

faces him in every issue of his favorite paper is most likely to make the sale.

In the past our breeders have been unable to supply the demand but the time is near at hand that with so many breeders in different lines the breeder will have to employ some form of a salesman, and in reality judicious advertising is nothing more than salesmanship.

While we do not mean to infer that California breeders are becoming overstocked, we know of many instances where trips East have been made in search of stock which would have been unnecessary had the intending purchaser known what was being offered at home.

While it is true that pure-bred female stock has been rather hard to locate in this State, that condition will soon be overcome as the different herds reach the capacity of the owner's ranch, and we believe we are safe in saying that at the present time the supply of pure-bred stock in all lines is almost sufficient for the demand providing the buying public is notified where they are to be found.

That the business methods of pure-bred breeders generally will have to be overhauled in the future may be shown by the fact that there are several large concerns going in to the breeding game who, having considerable backing, expect to put their business upon a business basis, and when that time arrives they will start advertising campaigns the same as is done with every other business. We cite these concerns only that the present day breeders may know what to expect in the way of competition and to show that they should take advantage of the situation and let people know what they have.

From what we have seen of the breeding game a man has to be efficient in most every line of business, but without the receipts from sales no man can hope to make a success of it, so again we give the commission man's advice, "Advertise."

[If every breeder, large and small, would see that his card was in the breeders' classified column of the leading farm papers every hog man in California by glancing over the stock "liners" could tell at once where the nearest pure-bred stock of the kind he wanted was available and it would be a big convenience to both breeder and grade stock raiser. The more of these liners there are the oftener they are used and a big list helps greatly in stock improvement. For the big breeder display advertising is required and very profitable, but both big breeder and small breeder should have his card where every farm paper reader could quickly find it.—Editor.]

HORSE WITH MANGE.

To the Editor: Would you kindly let me know through the PRESS what to do for a horse that has an itch. Have examined him closely, as I thought he might have lice, but could see nothing. He rubs himself all over, and the hair seems to be coming off in places. Just had him for a short while, and did not notice this until just lately, so do not know how long he has had this trouble. I feed him good oat hay and two quarts of rolled barley per day and drive him four times a week. —J. R., Petaluma.

ANSWER BY DR. E. J. CREELY.

Mange in the horse is possibly the hardest thing I know of to treat. The kind of mange cure that would cure one case would have no effect on the other form. The reason is that there are a great many different kinds of parasites causing mange. I wish you would scrape the scales and send same to me in a properly secured package. In the meantime use olive oil, 11 oz.; kerosene, 2 oz.; Pearson's Creoline, 2 oz, and compound tinct. Benzoin, 1 oz. Mix, and apply once daily after washing thoroughly. Whitewash stable and keep currycombs, etc., away from other horses.—SAN FRANCISCO VETERINARY COLLEGE, 1818 Market St., San Francisco.

HORSES AND MULES.

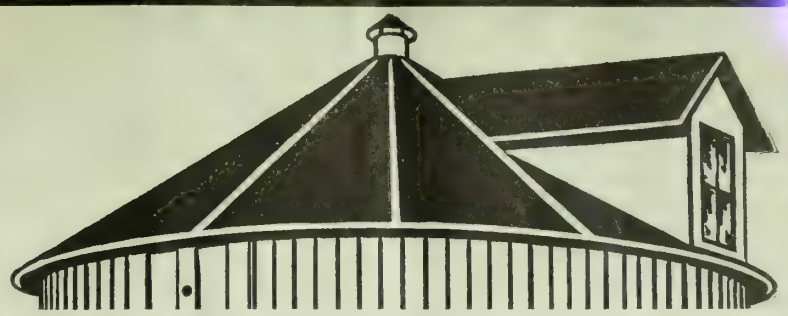
PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three year old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

SHEEP.

FOR SALE—85 highly graded young Shropshire ewes; two thoroughbred rams. Perkins & Co., Perkins, Cal.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.



Silage Would Increase Your Dairy Profits

This summer, when burnt-out pastures are reducing your dairy output, don't you often wish that you had erected a silo last summer?

If you had done so, you would right now be feeding your cows succulent and milk-producing silage, just as good milk-producing food as green pasturage, and getting a good deal more milk and making more profit out of your dairy.

All successful dairymen now-a-days consider a good silo a very necessary part of their dairy equipment, and there is no question but that feeding ensilage greatly increases the milk flow.

Don't put off ordering your silo and perhaps find yourself in the same fix next year.

Write for full information regarding the IDEAL GREEN FEED SILO.

CATALOGUE SENT FREE.

Ensilage Cutters and Gasoline Engines

DE LAVAL DAIRY SUPPLY CO.

101 Drumm St., SAN FRANCISCO. | "Everything for the Dairy & Creamery" | 1016 Western Ave., SEATTLE.

ENLARGED THYROID GLAND.

To the Editor: I have a calf that has a lump on her neck, which appeared when she was two days old. The lump is getting larger. Would you please tell me the cause and remedy?—Mrs D., Auburn, Wash.

ANSWER BY DR. E. J. CREELY.

This is probably an enlarged thyroid gland. I would advise the application of the following once daily for several weeks and let it alone unless it becomes too large or gets very soft, which is unlikely. Churchill's tincture iodine, 8 oz.; turpentine, 1 oz.; sulphuric ether, 2 oz.; oil aniseed, ½ oz. Mix and apply once daily. San Francisco Veterinary College.

A-1 Grade Second-Hand

PIPE

AND

SCREW CASING

Best Quality. Fully Guaranteed. Get our prices before buying. They will interest you.

GEO. P. ALEXANDER & CO.,

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Formerly conducting business under name of Alexander Pipe Co.

Swineland

Tamworth
Duroc-Jersey
Berkshire Swine

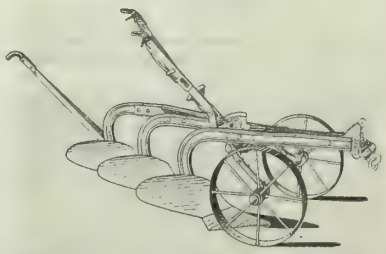
2 Gold Medals
2 Silver Medals
4 First Premiums
2 Second Premiums

at the

California State Fair

SWINELAND FARM
Box 57, Yuba City, Cal.

THE "NEW IMPERIAL"
VINEYARD GANG PLOWS



For Orchard and Vineyard Work
in either 2 or 3 gang
Steel or Chilled Bottoms
"IMPERIAL," that's the name

Write for Prices and Catalog

THE H. C. SHAW COMPANY
Stockton, Cal.
Wholesale Distributors.

"Why do you want a new trial?"

"On the ground of newly discovered evidence, your honor. My client dug up four hundred dollars that I didn't know he had."—Louisville Courier-Journal.

With the Livestock Men.

R. H. and C. H. Collins, large seed growers of San Leandro, have about completed the building of their dairy plant. This is one of the most complete and up-to-date dairies we have seen in the State, there being four 300-ton capacity silos made of reinforced concrete, a strictly modern barn equipped with Louden stanchions, manure carriers, electric lights and a cement drained floor. The milk house is a model of cleanliness and convenience in construction and is fitted for certified milk production. A herd of pure-bred Holsteins will be maintained eventually, but for the immediate future only tuberculin tested grades will be used. Details of the ranch and buildings will be given in these columns at some other time.

A shipment of five head of registered Holsteins recently passed through San Francisco, consigned to Mr. Donald of New Zealand. The stock was purchased in New York State, there being four head of females and a bull, the latter being a grandson of Pontiac Korndyke.

W. M. Carruthers reports having shipped three Holstein bulls and a coach stallion to Nicaragua during the past week. The cattle were bred and sold by Mrs. Curtiss, of Woodland, Yolo county.

A report states that D. M. McLemore, who has shipped several trainloads of California cattle to Oregon this season, sold to Edson Falke a 15-car train of stock at Gazelle the past week. It is said that prices around Klamath Falls and Lake county for feeders is higher than buyers care to pay.

Another carload of dairy neifers were shipped from Modesto the past week and consigned to the Portland Union Stock yards at Portland. Buyers from the northern countries are taking advantage of low prices of California dairy cattle and high prices next year for that class of stock are likely to prevail, providing next winter's rains are back to normal.

Miller and Lux shipped 2000 head of mutton sheep to the San Francisco market during the past week from Sterling City. This firm ranges many thousands of sheep on the cut over timber lands during the Summer months. In the Fall they are taken to Merced county, where they are sheared and put into winter pasture.

The first Australian beef to reach the lower San Joaquin valley was offered at Visalia this week. It is said that butchers are offering it 6 cents below local beef and that so far trade has been good.

E. S. Dunbar, a representative of the Western Meat Company, recently visited the dairy section around Patterson and stated afterward that his firm would establish a cream station at once. The Company will pay 5 cents above the San Francisco quotation and will also undertake to handle eggs and poultry for the farmers. One good thing about dairying is that there is always plenty of buyers as soon as production starts.

Hubbard and Carmichael of Los Banos have just had installed ten B. L. K. milking machines by Baker and Hamilton of San Francisco. These machines have taken the place of twenty hand milkers and are said to be running very satisfactorily.

L. A. Hall of San Jose, who has been a Holstein breeder in this State off and on for several years, is now permanently located at San Jose, where he has a good foundation herd of about 25 head, large and small. The herd bull is Colantha Sir Pontiac Aaggie, a three-year-old purchased from Fields of New York. This bull is a grandson of Colantha 4th Johanna on his sire's side and his fourteen nearest dams averaged 25 pounds of butter in seven days. Although none of his daughters are in milk as yet, they are all likely looking individuals. Some official testing was done with this herd in January, the highest weekly record being 29 pounds of butter in seven days. There are forty acres in this ranch, fifteen of which are seeded to alfalfa and more will be put in next year. Water is pumped for irrigation with a gasoline engine. Mr. Hall has finished building a new modern cow barn and states that he expects to increase the herd to about twenty head of milk cows.

A meeting of Fair representatives will be held at Pleasanton August 12 to organize a Pacific Coast Association of Fairs.

At a meeting of the Fresno Fair directors last week the prize money for the horse and cattle divisions was increased $500, making a total of $2500. This action was taken to encourage breeders of pure-bred stock to make exhibits.

At an auction sale of dairy cattle held

THE HINMAN MILKER

In Fifty Dairies on the Pacific Coast

Holtville, Cal., May 22, 1913.
Chas. F. Daniells & Son.

Gentlemen: We have used the Hinman Milking Machine for ten months with the best of success. Our cows are gaining in quantity of milk as well as butter-fat. We will never do any more hand milking. We find the machine excellent for milking heifers. The 1913 valve chamber is an improvement which adds greatly to the efficiency of the machine. I know the Hinman will not injure the cow in any form, and saves labor and expense.

Yours truly.
J. R. McCORMACK.

C. F. DANIELLS & SON,
Agts. California and Oregon,
Modesto, Cal.

SHROPSHIRES

Pure Bred and Registered

For 1912:

140 Head Yearling Rams
150 Head Ram Lambs

Enterprise Stock Farm

H. P. EAKLE, Jr. Woodland, Cal.

HOWARD CATTLE CO.

BREEDERS AND IMPORTERS
SHROPSHIRE SHEEP
SHORTHORN CATTLE
BERKSHIRE HOGS

326 Sharon Bldg., San Francisco.

California State Fair

Sacramento, California

September 13-20, 1913

WILL BE THE GREATEST SHOW OF HIGH BRED LIVE STOCK EVER EXHIBITED ON THE PACIFIC COAST

Premium List has been enlarged so as to take care of a larger number of classes, and in some instances materially increased.

Especial attention is called to the fact that a liberal increase has been made in classifications and premiums on dairy products.

The Poultry and Pigeon Department has been revised and an increase has been made in premiums. In Pigeon Department no first premium will be less than $1.00; no second premium less than 50c.

A classification has been made for market culinary animals, providing premiums for rabbits and hares.

There has also been established boys' judging classes, and the sum of $400.00 set aside for premiums for boys who prove the best judges of live stock.

Premiums are provided for the best displays of Indian corn and spineless cactus.

Premium list is now being prepared. Send in your name now, to be placed on the mailing list.

ADDRESS, J. L. McCARTHY, SECRETARY,
State Agricultural Society,
Box 592, Sacramento, California.

A. L. SCOTT, President.

CHOICE CHEAP CONCENTRATED

MODESTO ALFALFA MEAL

FOR

CATTLE POULTRY SWINE

FOR PRICES SEE OR WRITE

THE GRANGE CO., Modesto, Cal.

Hillcrest Stock Farm

THORNTON S. GLIDE, Prop.,
DAVIS, CALIFORNIA

Breeder of

Short-Horn Cattle,
Shropshire and
Merino Sheep

"Hillcrest Lad"—First Prize Ram at State Fair, 1911.

Offers for Season of 1913 an exceptionally fine lot of Pure-bred and Registered Shropshire and Merino Rams, yearlings and two-year-olds.

1st Prize Ram Lamb, Omaha, 1911

SAN RAMON SHROPSHIRE FLOCK

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.

CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.

OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.

INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS.,
San Ramon, Contra Costa County.

in Tulare county last week sales averaged $52.25. Taking into consideration the feed conditions of the county the owners were well pleased.

A review of trade conditions in percherons for the six months ending April 30, 1913, shows that during that time 3974 animals were recorded with the Percheron Society of America. Of these 1249 were American-bred stallions, as against 602 imported, also 1666 American-bred mares against 457 imported.

From this it can easily be seen that the American-bred draft horse is being recognized for its true worth. Farther on in this report we notice that Canada has also been quite a heavy buyer of American-bred horses this year.

T. S. Glide of Davis recently sold 36 head of high grade Shorthorn steers, heifers and cows to the University Farm. It is stated that these, as well as the 20 head of Holstein purchased last week, will be used for feeding experiments.

Reports indicate that cattle shipments from Arizona will be much smaller this year than in past years, some placing 75,000 head as a conservative estimate.

The George Ormsby ranch near Petaluma was sold this week to M. S. De Martin. The new owner will conduct a dairy.

A report from Kings county states that several cars of porkers have been shipped from Hanford the past week and that there is considerable interest being shown in the hog market by buyers.

The committee in charge of the live stock exhibit for the coming district fair at Santa Rosa reports that indications point to a large list of entries. No registration nor pedigree restrictions are to be made, the idea being to make the exhibit as large as possible.

The livestock market, at the Portland Union Stock Yards for the past week, was much improved over last week in most lines. The cattle market was one of the most active ones of the year and contained considerable good quality beef. The outlet was broad and buyers seem keen for prime stuff at the following prices: Prime steer, top, steady to strong at $8 to $8.25; cows and heifers, $7 to $7.25, with occasional sales 15 to 20 cents higher. Receipts at the hog market were unusually light and the trade has been unable to fill orders for pork supply. Prices for the bulk of sales averaged from $9.50 to $9.90, with a high quotation of $10. It is expected that shipments of hogs into this market will likely be light until the annual Fall run of pigs commences. Both the receipts and demand for sheep and lambs was poor, with top quotations as follows: Valley lambs, $5.25 to $5.50; Best Mt. Adams, $5.50 to $6.00; ewes, $3.75, and yearlings, $4.25.

SCOURS AND DYSENTERY.

To the Editor: I would like to know the reason for bloody discharges from the bowels of a young six-day-old calf. There is a looseness of the bowels and the blood is intermingled with the excrement. There is not a profuse amount of blood, nor is it very dark in color, and it seems to be accompanied with mucus or light, thick substance. I am inclined to believe it to be a rupture or internal injury caused from climbing over a board partition. Apparently the calf is without pain, but shows slight loss of appetite. The mother is a fine healthy animal and had a perfectly normal delivery.—H. W. G., Santa Rosa.

ANSWER BY DR. E. J. CREELY.

This is dysentery, due to scours so prevalent in calves. Give 6 ounces olive oil, 4 drachms bismuth subnitrate and 1 drachm Pearson's creoline. The discharge is very dangerous to other animals. I would like to have Dr. George Constable, veterinarian, Santa Rosa, make a laboratory slide for me.—San Francisco Veterinary College.

PREVENTION VERSUS CURE.

There is always a clamor for some panacea for the relief of a multitude of ailments. It makes little difference whether the patient is human or animal. Tell a farmer how to improve the condition of a sick animal and he will be very grateful to you and remember you, but try to teach him how to prevent sickness in a hundred head of livestock and he will scoff at you and promptly forget your instructions.

In human medicine the idea of making every man his own physician has long since been dropped, but since veterinary knowledge and education lags behind, there still exists a demand for the instruction of farmer along the lines of veterinary medicine.

Through the practice of veterinary medicine it has been found that if the farmer had taken a few precautions, he might have avoided some of his most serious losses.

A few suggestions then of some of the common errors should be in order.

Corn, chop and ground barley should only be fed in very small quantities to horses.

If a horse is accustomed to hard work he should not be given a day's complete rest, especially upon full feed.

Stop to pull a nail from a board rather than turn it over.

Remember that a colt between the ages of 2½ and 3 years gets 12 new teeth. See that the old ones are properly shed. Have a veterinarian examine your horse's mouth once a year.

H. E. Kingman.
Colorado Agricultural College.

Warranted to Give Satisfaction.
Gombault's Caustic Balsam

Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address
The Lawrence-Williams Co., Cleveland, O.

N.A.M. Soy Bean Meal
PROTEIN EXCEEDING 44%
For Cattle, Poultry and all Farm Animals
Will double your milk, cream and egg supply.
Write for booklet "Systematic Feeding and the Value of Soy Bean Meal."
NORTH AMERICAN MERCANTILE CO.
318-320 Front St., San Francisco

Cutter's Anthrax and Blackleg Vaccines
are given the preference by 80 per cent of California stockmen because they give better results, than others do.
Write for Prices, Testimonials and our New Booklet on Anthrax and Blackleg.
THE CUTTER LABORATORY
P. O. Box 257, BERKELEY, CAL.

BERKSHIRES
Our herd is now one of the best in the State, being rich in Silvertip, Black Robinhood, Longfellow, Empress and Masterpiece Strains.
Prices reasonable, satisfaction sure. Correspondence solicited from interested parties.
OAK GROVE DAIRY FARM,
Woodland, Cal.

HOLSTEIN HEIFERS
3 two-year-old bred for first calf.
PENNANT DAIRY,
E. J. WELDON,
Box 962, Sacramento, Cal.

Make Big Money Drilling Wells

IMPROVED STANDARD DRILLING MACHINE
One Man Can Handle
Has a record of drilling 130 feet and driving casing in one day. Only three levers. Extra large rope sheaves. Positively will drill every kind of formation. Avoid delays from sending back East. Buy from us. We build these up-to-date machines. Will tell you all in catalog. Write for it.
WESTERN MADE FOR WESTERN USE
REIERSON MACHINERY CO., MANFRS., PORTLAND, OREGON

=YOUR OPPORTUNITY=

21 ACRES choice land situated only 26 miles from San Francisco and 2 miles from a good thriving town. Eleven acres in 12-year-old grape vines; 10 acres open land, suitable for fruits, etc. Climatic conditions the best. This is your opportunity to secure a good income property that will return 15% on the purchase price this year
Price $5,500.00; terms, one-fourth cash, balance in three annual payments, with interest at 6% on the deferred. For further particulars write to
R. H. TRUMBULL,
804 Postal Telegraph Bldg., San Francisco.

Live Stock from the East
Will leave early in August for another Eastern trip to make personal selection of breeding stock for shipment to California.
Place your order now and get benefit of carload freight rates.
W. M. CARRUTHERS, Live Stock Commission
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The State Fair and Fruit Shows.

The Fair season will soon open in California and every farmer should attend one or more of them, not only to help along a good thing for his community, but as a means of learning what is being done and to assimilate information and ideas for use on his own ranch. If possible send some exhibit, it will help you as well as others. The prizes given are not the only things that are worth while. Whether you do or do not win you gain more than you give.

The State Fair to be held at Sacramento from Sept. 13 to 20 is to be the biggest one yet given by the State Agricultural Society, and Secretary McCarthy will gladly mail a premium upon request. Some of the new features to be introduced this year are: Stock and poultry judging contests by boys from the Agricultural College, the University Farm and boys with no stock judging training at all; special prizes are to be given for dairy herds; the annual horse show will carry $1000 extra in prizes, and besides these the various stock societies of America offer special premiums. The stock parades will be held on Thursday, Sept. 18 and on the Saturday following. The horticultural displays, especially by districts and counties, promises to eclipse those of former years.

SEBASTOPOL APPLE SHOW.

August 18 the annual Gravenstein Apple Show will open at Sebastopol. This exhibition will be given in a monster tent covering an area of 30,000 square feet, of which over three-fourths of the space has already been taken. No one who has attended these exhibits in the past but has pleasant memories of a beautiful scene. The country around Sebastopol is also worth looking over, and when possible one would do well to prepare for at least a two days' visit.

PLACERVILLE PEAR SHOW.

In the mountain county of Eldorado will be given for the first time this Fall a Bartlett Pear Exhibit. Other fruits will also be shown, but the Bartlett is the premier fruit up there and the citizens of that section want the world to know it. The exhibits will open to the public on August 28 and continue three days. Prizes of more than $1000 will be awarded among the various fruit exhibits, which promise to be above the average in quality and design. A special vaudeville performance will be given each evening in the big tent, which will be staged by a leading actress.

ST. HELENA VINTAGE FESTIVAL.

Napa county will send its best in viticulture, horticulture, and agriculture to St. Helena for the annual exhibit to be held from September 6 to 9. The Vintage Queen will be crowned by St. Helena and she will reign over the festival for four days. On the last night of the exhibit King Grape will ascend his throne and lead in the carnival which will close the merrymakings. A trip through beautiful Napa valley to St. Helena is a fine outing at any time, and with this added attraction many thousands will doubtless make the pilgrimage this Fall.

CALIFORNIA APPLE ANNUAL.

The fourth annual California Apple Show will be held at Watsonville from October 6 to 11. This exhibit is now statewide in its scope, and the people of the Pajaro valley promise a bigger and better exhibit than ever. Exhibits from every apple growing district of the State will be made, the prizes are numerous and large and no charges will be made exhibitors for racks, tables, space or entry in fruit departments. Watsonville and the Pajaro valley are worth visiting and the people will hold open house to visitors during the show.

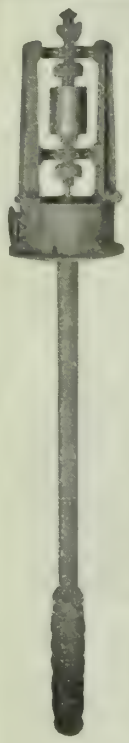
"No," complained the Scotch professor to his students; "ye dinna use your faculties of observation. Ye dinna use them. For instance——"

Picking up a jar of chemicals of vile odor he stuck one finger into it and then into his mouth.

"Taste it gentlemen!" he commanded, is he passed the vessel from student to student.

After each one had licked his finger, and had felt rebellion through his whole soul, the old professor exclaimed triumphantly:

"I tol' ye so. Ye dinna use your faculties. For if ye had obsarved ye would ha' seen that the finger I stuck into the jar was nae the finger I stuck into my mouth."



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The Study of Corn, Shoesmith	.50
The Hop, Myrick	1.50
Meadows and Pastures, Wing	1.50
Trees and California, Jepson	2.50
Asparagus Culture, Hexamer	.50
New Onion Culture, Greiner	.50
American Cattle Doctor, Dadd	1.00
Home Pork Making, Fulton	.50
Farm Gas Engines, Brate	1.10
The Book of Alfalfa, Coburn	$2.00
Swine in America, Coburn	2.50
Feeds and Feeding, Henry	2.25
Farm Development, Hays	1.00
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Preparing Birds for Poultry Show.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

The season is getting around towards show time, though I believe the first on the list will be the State Fair, but it takes time to prepare birds intended for show and it is better to have them ready before than after.

Anyone intending to exhibit should first acquaint themselves with the standard requirements of the breed they raise. Then, standard in hand go out among the fowls and pick out the most promising specimens of each sex and put them in a coop or coops by themselves. Next day go over them again and keep this culling up until you have it down to bed rock, or so that you have nothing left but what will absolutely stand inspection by a judge.

There is no use in taking the trouble to train and fit birds for a show that one knows will be disqualified, this is sometimes done through oversight by even old hands, but if they took pains to examine each bird well before training it would not be done. The day is past when a bird can be caught up out of the flock and put in the show room, and stand any chance at all of winning, because competition is too keen for that in these days. So if you intend to exhibit you must take pains to make your birds as nice as possible. Good grooming counts, don't forget that. At one show in this State I heard an expert breeder and exhibitor say that he could fit a bird to win at New York, just as well as the easterners did, and a lady present asked him why he did not do it for that show? He said "he did not have to," he relied on the quality of his birds to win but the judge gave first prize pen to a woman that thought "she had to." The consequence was she won, not because she had better stock, but because they were in better condition, and the judge goes on the present condition, not the past.

Now we will suppose that we have the best birds selected. Hens or pullets need very little fussing with except to feed out of your hand and when they will do that they are tame enough. But for male birds you want to get them so that when the judge comes along with his stick and pokes it in the coop they will walk right up to the front and act as if that was the most natural thing in life. It takes time and patience but it can be done.

Commence by feeding little bits of meat, warm bread or anything they are fond of, you may have to drop it on the coop floor at first, but gradually the shyness will wear away, if you do not lose your temper, and they will take it from your hand. When they reach that stage pick them up for a minute or two at each feeding and stroke their feathers, and take your finger and stroke them under the beak, you can get them to pose that way better than any other I know of. A male bird that is wild and fights stands a very poor chance of winning no matter how good he is.

COLORED BIRDS.—All colored birds are better groomed without washing, while white birds must be washed. The legs, however, must be washed and trimmed, polished and made to look as just as nice as if the bird was white. Rubbing gently with a silk handkerchief helps a black or buff bird, because it adds luster to the plumage and makes him shine.

TO WASH THE LEGS.—Don't forget that cleanliness gives a bright healthy color to the legs and toes that counts in the show room. The best way is to wash them thoroughly with warm water and soap, allowing time for the water to soak the scales; scrub with a small hand brush until all the dirt is removed, then wipe dry. The next stage is to pick all the dirt from under the scales with good sharp toothpicks. A little exercise will enable any one to do the trick, though it appears to be too much trouble for some. When the dirt is all out, wipe off with a wet cloth and then a dry one. For the final finish use a little alcohol and parafine wax dissolved together, rub a little of the mixture on the legs then rub with a dry cloth until the legs shine. The comb and wattles may be rubbed with a little alcohol and glycerine to make them look bright and fresh.

WASHING WHITE BIRDS.—The following method is the one I use myself. There are as many more way, I presume, as there are exhibitors, but this suits me and I usually get my birds clean. The day before I am going to wash the fowls I get things ready, first I make my soap mixture which consists of cutting up a pound of Castile soap into shavings. When the soap is cut up I pour a little hot water on it and when it is dissolved add about one ounce of ammonia, a tablespoonful of chloride of lime and about an ounce of alcohol. These ingredients are all stirred up and enough hot water added to make two quarts; the whole is then poured into a dish where it can cool and set into a form of jelly.

I use ball bluing because I am used to that kind, but the liquid bluing is just as good. Now in washing you will need, at least, three tubs, four is better, but three will do very well. Have a good supply of hot water on hand to commence with and the room must be at least summer heat, or your birds will take cold. So have a good fire started and all your birds handy, so that you will not have to open doors on either the poultry or yourself. Have the three tubs in a row, number one is to scrub the dirt out; number two is to rinse the soap and dirt both out of the feathers, and number three is the bluing water.

Now take your hen in both hands and place her gently in the first tub, the water being just warm enough to bear your own hand in, don't hurry but let the water soak through the feathers, dabble it with a cloth and when the whole is good and wet get some soap in the right hand, holding the bird by the left, and rub the soap compound all over the feathers, as you would rub in your own hair. When you have a good lather get your hand brush and commence to brush the dirt out. Be very sure the feathers are wet through before you brush crosswise or they may break, when a feather is wet it will stand most anything, but it easily breaks when dry. Scrub across the back, and taking each wing in your hand separately brush crosswise and lengthwise until every bit of dirt is out, doing the same with the tail and abdomen, in front don't spare a bit of the outside of the bird. When the dirt is all loosened stroke off the extra soapsuds and move on to number two tub. Here you will need a sponge and the water should be a little cooler than that in tub number one. Plenty of clean fresh water in this tub is what makes a good job of your washing, because if you fail to get all the soap out of the feathers they will not fluff out as they should and so will not appear natural. When all the soap is out move on to the bluing water, and this should be a little cooler than the previous tub. Now the blue water should be about the same as for white clothes, too much spoils all your work because it is next to impossible to get it out, and too little leaves something to be desired, though you hardly know what it is. Bluing white birds may be called faking, but if so everybody fakes, for nobody puts a white bird through the wash without bluing it. So it is called legitimate faking, because everybody does it. After taking the bird from the blue water stand it on a chair, table or anything handy and wipe off all superflous water that you can, then if it is a nice sunshiny day and you have a clean coop with some nice clean straw in set the bird out in the sun to dry. In winter place the bird before a good fire in a clean dry coop, but the sun bleaches the feathers better than any fire ever can do.

BLEACHING.—Now for a few words on bleaching, so called. I say so called, because while I have heard much about it, and even paid money for expert advice and recipes, bought the chemicals and used them, I never managed to get a feather to bleach yet. What's more I don't believe anybody else ever did. California climate is hard on white birds and the only thing to do is to work so as to breed the creaminess out, for believe me, you can't bleach it out. If you could boil the feathers like we do clothes it would be easy enough to bleach them, but anything that would bleach the feather would burn the life out of it. One of the best poultry judges in California, Judge Henry Berrar, told me that brassiness could not be bleached out of white birds and I have found out that he knew what he was talking about.

Sometimes birds that are washed get a little diarrhoea, so before washing it is well to feed them a good feed of boiled rice sprinkled with cinnamon or prepared chalk. If there is any danger of the birds taking cold, give three or four drops of spirit of camphor on a bit of bread just before putting them to dry. The finishing touches to the toilet is to brighten the comb and wattles with glycerine and alcohol, rub up the legs and be sure every bird is leg banded so that the show officials will know whose bird they are handling.

Oh yes, there is quite a few items to attend to, none of which must be neglected if you want to succeed, every coop must have a card on giving the birds and number, sex and breed. These things are all necessary to keep track of the different breeds and the numbers.

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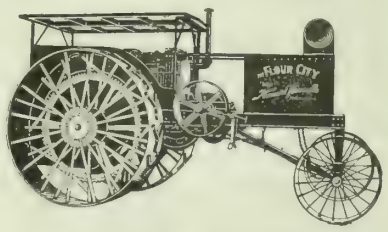

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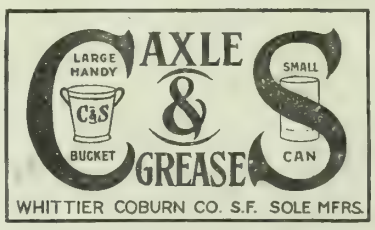

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The Home Circle.

"Imitation Is the Sincerest Flattery."

Betty was dashing out of the house with her usual impetuosity when Nancy's warning voice recalled her. Nancy was much older than Betty,—in fact, almost thirteen,—so Betty had to stop and listen.

"Where are your rubbers, Betty?"

Betty looked down at her patent-leather clad feet.

"I don't know!"

"Mother said you weren't to go out into the snow without them, you know."

Betty slammed the door shut and rushed upstairs. Then she whirled things round her room for some little time, and finally emerged from her closet with a rubber in each hand.

"I'm putting on my rubbers, Mother dear," she said virtuously, as she met Mrs. Darrell in the hall.

"Run, child, or you'll be late," said her mother, kissing the rosy face; "and tomorrow's a holiday."

Betty found the girls in her class planning great things for the next day's respite from study. They were all feeling very friendly to the father of their country, to whom they owed—well, I don't mean their country, though of course they did, in a way, but their holiday.

Miss Wilson, their teacher, took the occasion more seriously. She was a hero-worshipper, was Miss Wilson, and George Washington's portrait, handsomely framed, was on the school-room wall, flanked by smaller pictures of minor celebrities, such as Emerson, Washington Irving, Bryant, Longfellow, and others.

"She's going to give us that cherry tree stunt again," murmured Betty to Hilda Clark, her desk mate, as they settled down for "Literachoor," as some of the class termed the last lesson of the day. "We'll decide on cocoa, don't you think, for supper?"

But for a wonder Miss Wilson did not give them "the cherry tree stunt." Instead she asked them to suppose what might have happened if George Washington had denied having performed the "stunt" in question. The class sat up. They usually did when Miss Wilson asked them to "think what would have happened" which was one of her favorite ways of teaching.

Various suggestions were offered:—

"He'd have caught it from his father, when he did find out."

"He'd have said something that wasn't true the next time, because you get into habits like that."

"I think," said the teacher, "that by speaking the truth, he just climbed to a plane that made speaking the truth a very easy habit, and truth in word led on to truth in deed. Think what 'truth in deed' means, girls! Doing the right thing, which is the wise thing and"—

"Is it always the successful thing?" demanded Clara Bird. Clara's questions were generally admired by her friends, for they sometimes posed Miss Wilson.

"That depends on what we understand by 'success,'" replied the teacher. "Sometimes an apparent failure leads to a later, and bigger, success. I think history teaches us that in the long run George Washington was always successful. But the point I want to make today is this. The habit of truthfulness helps you up to a plane where truth in deed follows truth in word. So, girls, why not climb?"

Between a critical discussion of the merits of the lesson and an altercation as to the respective virtues of cocoa and hot lemonade as beverages, Betty forgot her rubbers. As the snow was very dry, however, it happened that her feet did not get wet, and, when her pretty patent leathers were wiped quite dry, and she had warmed and put on her house slippers, she gave the lost rubbers no further thought. Betty had to be extra careful, owing to a predisposition to a sore throat that she was fortunately outgrowing.

The next day drew a great many regretful "Oh's" from a great many young people. The snow was melting fast, a light, drizzling rain was falling from a densely cloudy sky, and the outdoor sports seemed doomed. Betty's class had settled on a paper chase with supper, on a co-operative plan, at Betty's home.

"You can't go, dear," said Betty's mother, gently, but firmly, "not unless the sun comes out."

Rather to Betty's surprise, the sun did come out. So she stopped her mother just as Mrs. Darrell and Nancy were starting off on a round of afternoon calls with little packages for some invalids, including four children at an adjacent hospital.

"See? It's shining quite hard. So I can go?"

"Very well," said her mother, turning on the doorstep. "Wrap up well, and don't forget your rubbers. Good-bye."

Not till the door had closed did Betty remember that her rubbers were safely locked up in the deserted school-house!

For a few minutes she stood, tears gathering in her eyes.

Then she began to feel very angry. Why should her whole afternoon be spoiled—the very last holiday until Easter—for a pair of ridiculous, unnecessary, trivial, empty rubbers!

Her cheeks grew so hot that her tears were dried, as she determined that she would go on that paper chase!

First she made a really conscientious search for somebody else's rubbers. There might be an old pair of Nancy's in the attic. Alas! The attic had been tidied by Nancy herself, in the fervor of a New Year's resolution to help mother more, and the old shoes and rubbers had all been disposed of. Nothing that would cover her feet could be found anywhere. Betty had the sense to put on two pairs of stockings, and then—she went out.

For a time she also had the sense to pick out the driest parts of the road. But, as the hares (Betty was a hound) led far and wide, she cast care to the winds in her desire to run them down. So it happened that, when Betty reached home not long before her mother and Nancy returned, both pairs of stockings were as wet as if they had just been washed!

It was the work of a moment to find dry hosiery, and the house slippers had been leaning against the radiator all the afternoon. Betty shivered a little as she changed her dress; but she was dry, neat, and eminently sane of appearance by the time mother and Nancy had taken off their rubbers.

"Are you quite all right, Betty, feet dry?" inquired Mrs. Darrell, anxiously. "When I saw what the ground was like, I did wish I had told you to stay at home."

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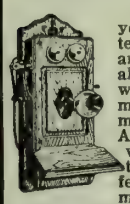

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"I'm quite dry, mother dear," said Betty.

"Her rubbers were new," added Nancy, reassuringly.

"That was my one comfort," said Mrs. Darrell. Betty winced a little. She was still feeling very shivery, and she sat down by the radiator. The zest seemed gone from the evening's festivity, somehow. Then, too, Miss Wilson's words kept singing themselves in her head,—"Up to a plane." She kept visualizing that plane. It was a nice path, and she wasn't on it. Instead, she was down on a muddy, snowy, cold, uncomfortable road well below the plane. She shivered again. Nancy sprang to her side.

"Are you cold, dear?" she asked, anxiously. They were always a little anxious about Betty.

She put her hand to her sister's scarlet cheek as their mother crossed over to them.

"No," she said, looking at Mrs. Darrell. "Her face is quite hot."

Mrs. Darrell touched the said face, and then sat down.

"Betty dear," she said in the persuasive voice she always used when she wanted Betty to go to bed, "did you get wet?"

"My skirt was quite dry," said Betty. The plane moved higher up, and she wanted so much to get on it.

"Her feet couldn't have got wet, you know" added Nancy, "with those perfectly new rubbers."

They didn't ask Betty if she had worn them. She didn't have to say a word that was not true. Then why did the plane seem so far above her? She suddenly thought of yesterday's lesson and of the picture,—the benevolent, calm, wise face of the man who was truly the leader of so many, up to that plane where he walked in peace.

Then Betty gave a leap, and landed on the plane.

"I didn't wear my rubbers," she said. "I left them at school." She burst suddenly into tears, though she laughed, too. "I'm so sorry, mother dear. But don't worry about me. I'm on the 'Plane.'"

* * * * * * *

Betty, lying, oh, so comfortably in her white bed, with the doctor's assurance that it was a very light attack, and she would be all right in a day or two, could hear the sounds of revelry below. There had been no time to put off the party, and Nancy had come most nobly to the rescue. Betty realized that she was happier lying down than she could possibly be standing up! But the thought that brought most peace was that she hadn't tried to deceive her mother; that she hadn't even waited till a direct question put the bald alternatives—truth or a lie—before her. She had chosen before she was driven up against a wall! She felt that she could face that handsome portrait that Miss Wilson admired so without any shame. "And I'll always—imitate—him."

So she fell asleep, and dreamed of walking beside the first President on a flowery "Plane."

A paper received from a reader had the following query: "What do you think is the matter with my hens? Every morning when I go to feed them I find that two or three are lying on their backs, stiff as buckrams." The editor's reply was to the point: "We are afraid that your hens are dead."

The "Youth's Companion" quotes the story of a small boy who evidently believed in the adage "Of two evils choose the less." Turning a corner at full speed, he collided with the minister.

"Where are you running to, my little man?" asked the minister when he regained his breath.

"Home!" panted the boy. "Ma's going to spank me."

"What!" gasped the astonished minister. "Are you eager to have your mother spank you that you run home so fast?"

"No," shouted the boy over shoulder as he resumed his homeward flight, "but if I don't get there before pa, he'll do it!"

Planting Roses.

Roses make a better showing when massed, but wherever the individual bushes may be put, give them a sunny spot. They love the sunshine and not too much wind, so if the exposure is wind-swept it will be well to set up a hedge. The bushes must not be so near or so high as to shade the roses. Yet, if the ground about them is sandy and the sun very hot, the flowers will be glad of a little shade during the warmest weather. A location which gives the shade of a few trees for a short time during the day is just the place for them.

The soil must be a strong, rich loam that is well drained. If there is clay in it, so much the better. Most heavy loam contains enough, and hybrid perpetual roses do well in this, especially if the earth has a good many fibrous roots in it. Tea roses on the contrary, like a sandy gravel to grow in. It must be spaded to a good depth, and all the stones, roots and grass removed.

Well rotted stable fertilizer should be fed the plants abundantly, for roses can hardly be too much enriched. Different growers use different fertilizers. Some prefer that from the horse stable first, and that from the pig sty next, while others declare that a mixture from all stables excels all others. One thing is certain, the fertilizer must be well rotted or it will burn the roots of the plants and hinder growth, if it does not altogether kill them.

Plants that have been grafted are the ones most commonly sold.

They must be deeply planted to insure the hardiness of the union, and then the graft will often root of itself, and so an "own root" plant will eventually result.

In planting a rose, first see that all the bruised and broken roots are cut off smoothly and squarely. Cut the tops back, preferably just above a bud, and one that is on the outside of a stem. Do this with a pruning knife and not with shears, for these are apt to bruise the bark. The poorer the roots, the more a rose should be cut back. Strong growing kinds can lose a quarter or a half of their growth profitably, according to their good or bad roots. Weaker growings kinds must be pruned severely. Where the roses are being set in rows for the massed garden, they can be easily put in a trench. Place the grafted plants three or four inches deep in the earth. Plants from pots are put an inch deeper than they stood before. Roses do exceedingly well when set three feet apart. Never plant them in wet soil, but wait until it has dried. It will not do to set a weak grower beside a sturdy one, for the stronger plant will overshadow the feebler, and so grow and shade it that the other will fail to amount to anything. Very vigorous growers must be set from four to six feet apart. If set too close to a wall, roses will not have room for the roots. There should at least be a space of three or four inches between it and the base of the plant.—American Gardening.

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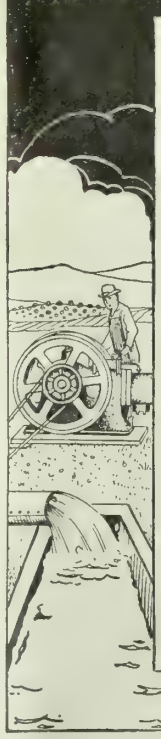

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THE MARKETS.

San Francisco, July 30, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There has been a very fair movement of wheat during the week, and while prices are again quoted somewhat lower, there is a stronger feeling at these quotations, the only notable decline being in Bluestem.

California Club, ctl	$1.50 @1.55
Forty-fold	1.52½@1.57½
Northern Club	1.50 @1.55
Northern Bluestem	1.67½@1.70
Northern Red	1.50 @1.65

BARLEY.

Value remain as last quoted, but the market is weakening again and local business is very light, few buyers being willing to pay over $1.30.

Brewing and Shipping	**Nominal**
Choice Feed, per ctl	**$1.30 @1.35**
Common Feed	**1.27½@1.30**

OATS.

Values are largely nominal, as there is no great amount of trading. There are some offerings at the former range, but buyers show little interest at the moment.

Red Feed	**$1.65 @1.85**
Seed	**Nominal**
Gray	**Nominal**
White	**1.55 @1.60**

CORN.

Reports of a shortage in the Eastern crop have caused a sharp speculative advance, which has brought out a little more buying interest and a slight advance in price in this market. California corn, however, shows no change.

Cal. Yellow	**$1.55 @1.60**
Eastern Yellow	1.52½@1.55
Eastern White	**Nominal**
Kaffir	1.60 @1.65
Egyptian	**1.70 @1.75**

RYE.

There is nothing doing in this grain, prices standing nominally as for some time past.

Rye, per ctl	**$1.45 @1.50**

BEANS.

The market in general remains quiet, though there has been a fair inquiry for certain descriptions. Pinks are somewhat lower, and there is less firmness than there has been in large whites, although supplies of most varieties are too light to make any marked decline probable. The new crop is not yet far enough advanced to tell much about the outlook, but it will be possible to get some idea of the situation within a few weeks.

Bayos, per ctl	**$3.15 @3.25**
Blackeyes	**3.15 @3.35**
Cranberry Beans	**4.70 @5.00**
Horse Beans	**1.90 @2.15**
Small Whites	**5.50 @5.70**
Large Whites	**4.50 @4.75**
Limas	**5.75 @5.90**
Pea	**Nominal**
Pink	2.75 @3.00
Red Kidneys	**3.40 @3.60**
Mexican Red	**3.75 @3.80**

SEEDS.

There is no activity in the seed market at present, prices being almost entirely nominal, with no change from the former figures.

Alfalfa	**12½@ 14c**
Broomcorn seed, per ton	**$27.00@28.00**
Brown Mustard, per lb	**3¾c**
Canary	**6 @ 6½c**
Hemp	**3 c**
Millet	**2½@ 2¾c**
Timothy	**Nominal**
Yellow Mustard	**Nominal**

FLOUR.

Business is running along about as usual, with prices steadily held at the old level.

Cal. Family Extras	**$5.60 @6.00**
Bakers' Extras	**4.60 @5.20**
Superfine	**3.90 @4.10**
Oregon and Washington	**4.90**

Hay and Feedstuffs.

HAY.

Arrivals of hay in San Francisco for the past week have been the largest so far this season, and such heavy offerings have brought about a decided slump in local prices, which are quoted considerably lower. There is quite a lot of hay piled up here now, and difficulty is experienced in moving it, even at the prices quoted. Of course, there is always a demand for wheat and oat hay which will grade as strictly fancy, but there is hardly any of this offered. Alfalfa also is a little lower here, but it is holding up better than grain hay. Dealers report very little movement in the country at present, as they are drawing on old purchases before buying anything further, and in some localities the growers are becoming anxious to sell. Wherever there is storage room, however, offerings are light.

No. 1 Wheat, or Wheat and Oat	**$16.00@17.00**
do No. 2	14.50@15.00
Lower grades	13.00@14.50
Tame Oats	15.00@18.00
Wild Oats	13.00@15.00
Alfalfa	12.00@13.00
Stock Hay	**9.00@11.00**
Straw, per bale	60@ 95c

FEEDSTUFFS.

The only change this week is a rather sharp advance in cocoanut meal, which is again coming into general use after being out of the market for some time. Other lines of feed are steady, with about the usual demand.

Alfalfa Meal, per ton	$20.00@21.00
Bran, per ton	27.00@28.00
Oilcake Meal	32.50@33.00
Cocoanut Cake or Meal	28.00@29.00
Cracked Corn	**34.00@35.00**
Middlings	**34.00@36.00**
Rolled Barley	28.00@29.00
Rolled Oats	34.00@35.00
Shorts	**27.00@28.00**

Garden Truck.

VEGETABLES.

Onions have dropped a little, as the shipping movement has been light and supplies began to accumulate. General garden truck is coming in well, and, while the demand is good, prices tend downward. Tomatoes are rapidly becoming a leading feature of the market, with steadily increasing arrivals and a large demand for attractive stock, and prices for river goods are well maintained. Cucumbers, green peppers, okra, eggplant, etc., have all dropped off sharply with liberal supplies and only moderate demand, and offerings of lima beans are excessive, bringing very low prices. String beans and green peas, however, are a little higher, with very moderate receipts. Green corn also shows a little more firmness, with a demand for all desirable stock that comes in. Carrots are lower.

Onions: New Yellow, River, ctl.	$ 1.00@ 1.10
Garlic, per lb	**3@ 4c**
Cucumbers, per box	50@ 65c
Cabbage, per ctl	1.00
Carrots, per sack	75c
Cauliflower, per doz	**40@ 50c**
Green Peppers, box	35@ 50c
Green Peas, lb	3@ 4c
String Beans, lb	4@ 5c
Summer Squash, lug box	50@ 75c
Green Corn, choice, sack	1.25@ 2.25
Okra, box	50@ 60c
Tomatoes, box	85c@ 1.25
Eggplant, box	50@ 65c
Lima Beans, lb	2@ 3c

POTATOES.

The potato market has improved materially of late, and there is quite a large shipping movement, both from here and from the river district. Prices, however, show no improvement, river stock standing as before, while San Mateo goods are lower. Sweets are lower, with gradually increasing supplies.

New River Whites	70c@ 1.00
San Mateo, box	50@ 75c
Sweet Potatoes, per lb	4@ 4½c

Dairy Produce.

POULTRY.

The local market remains in very good shape for most lines of poultry, notwithstanding somewhat larger supplies. The week opened with a fair stock of Eastern hens, but these were quickly cleaned up, and most of the California stock has found ready sale. Large fat hens are especially in demand, but offerings of White Leghorn hens are excessive, and these do not move so readily. Broilers and fryers are slightly higher.

Large Broilers, per lb	24 @25 c
Small Broilers, per lb	24 @25 c
Fryers, per lb	24 @25 c
Hens, extra, per lb	16 @17 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	15 @16 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	24 @25 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.75@ 2.25
Ducks, doz.	4.50@ 6.00
Turkeys, live	20 c

BUTTER.

Extras show a further advance of 1½c, being steady as quoted, though firsts are easier. Arrivals are running comparatively light, and there is no apparent surplus, at least of the top grade.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	30	30	30	30½	31½
Firsts	28½	28½	28	28	28	28

EGGS.

Prices have been climbing steadily all week, and with continued firmness a still further advance is expected, especially on extras. Arrivals are steadily diminishing and dealers find some difficulty in meeting requirements at the prices quoted. Low-grade stock is rather easy, as there is a great deal of Eastern stock offered.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	28½	28½	31	31	32	32½
Firsts	25	25	26	26	26	26
Selected Pullets	23½	23	23½	24	25	25

CHEESE.

All lines of cheese stand exactly as last quoted, with a good demand, but enough stock is coming in to prevent any advance.

Fancy California Flats, per lb	15½c
New Young Americas, fancy	18 c
Monterey or Jack Cheese	14@15c

Deciduous Fruit.

The local trade is somewhat more active than last week, but supplies are large, and prices rather easy. Berries and grapes are lower and rather easy at the decline. The market is filled with strawberries from south of the bay, and supplies in other lines are excessive, although the surplus in some lines is taken by canners. Grapes receive only moderate interest and are rather plentiful. Apples are rather plentiful and lower, although there is an active demand for fancy stock. Pears are in strong demand and firm, with an advance in No. 1 unwrapped stock. Apricots are higher, and offerings are beginning to decrease, and first-class peaches also are higher, though ordinary stock in miscellaneous packages moves rather slowly. A few nectarines are offered, but find little demand. There is an oversupply of ordinary plums and prunes, and prices on all lines are lower, while figs stand about as before, with only a few districts shipping. The cantaloupe market shows considerable improvement, with very moderate supplies and a good advance in prices, and watermelons are also a little higher.

Strawberries (chest):	
Banner	$ 4.00@ 6.00
Other kinds	3.00@ 4.00
Loganberries, chest	$ 5.00@ 7.00
Blackberries, chest	3.00@ 4.00
Huckleberries, lb.	12½@ 15c
Raspberries, chest	4.00@ 6.00
Apples:	
New Gravensteins, box	$ 1.15@ 1.75
Astrachans	1.00@ 1.50
Pears: Bartlett, No. 1, box	1.50@ 1.75
do No. 2	50c@ 1.00
Apricots, small lug	75c@ 1.00
do large lug	1.00@ 1.50
Peaches, box	60@ 85c
Plums, crate	60@ 90c
German and Tragedy Prunes	75c@ 1.00
Figs: Double layer, drawer	1.00@ 1.25
Nectarines, crate	1.00@ 1.75
Cantaloupes, large, crate	1.50@ 2.00
Watermelons, per dozen	1.50@ 3.00
Grapes, Seedless, crate	75c@ 1.00
Malaga	1.00@ 1.25
Fontainbleau	50@ 75c

Dried Fruits.

The dried-fruit market shows a noticeable improvement, with greater activity all along the line, though prices offered by packers have not been advanced. There is a little more firmness, however, with a steadily increasing demand for shipment, and buyers are actively at work in the country. They are interested principally in prunes and apricots, taking everything that can be had at the appearing prices. The export demand for prunes is well maintained, and Eastern buyers are now beginning to appreciate the situation and are getting into the market for the new crop. All sizes seem to be in demand, though the larger counts are most wanted. Apricots have recovered all their former firmness, and with a good part of the crop sold there should be an early clean-up. Peaches also show a little more strength, with the crop turning out only fairly well and a heavy demand for the green fruit, though packers and growers are still somewhat apart in their views. The local market for raisins is also stiffening up a little, though country prices stand as before. The New York Journal of Commerce says:

"All reports coming from California reflect a very strong feeling in prunes, as a result of the recent hot wave and north winds. However, buyers at this end are skeptical that the results are as bad as have been represented in the reports received from the Coast for a week or more. Consequently, Eastern operators are putting up few orders for September-October or later shipment from the Coast, and invariably their ideas of prices are quite a little under those held by packers at this time. Spot prunes are going steadily into consumption on small orders, and the market is firm. California 60s to 90s are reported to be getting into small compass, as the demand of late has run largely to these sizes, and prices on them are strong with an upward tendency. In spot apricots a moderate jobbing business is being done at the quoted prices. Forward shipments out of the new crop have a limited sale. The general tone of the market on fruit in either position is firm. Peaches on the spot sell slowly in small lots to meet present needs of consumption, while futures seem to attract little attention. Sellers are not trying to force business, and prices remain firm on the basis heretofore quoted. Nothing new was reported in the California raisin market. Both for spot and future goods, the demand was slow, and prices remained as heretofore quoted."

Evap. Apples, 1912 crop, per lb	5 @ 6 c
Apricots, 1913	10 @12 c
Figs: White, 1913	3 @ 3½c
Black, 1913	2½@ 3 c
Calimyrna, 1913	4½c
Prunes, 4-size basis, 1912	3 @ 3¾c
do 1913	4 @ 4½c
Peaches, 1912	3½@ 4½c
do 1913	4½c
Pears, 1913	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912	3 c
do 1913	3¼@ 3½c
Thompson's Seedless, 1912	4½c
do 1913	4 c
Seedless Sultanas, 1912	3½c
do 1913	3 c

Citrus Fruits.

Limes are again offering, but in small quantity and at extreme prices, and lemonettes are higher, while lemons remain firm at the old quotations. Oranges and grapefruit are moving in the usual moderate way for this season, prices being steadily held.

Oranges, per box—	
Valencia	$4.50@ 5.50
Grapefruit, seedless	2.50@ 5.00
Lemons: Fancy	6.00@ 8.50
Lemonettes	6.50 @ 7.50
Limes	10.00@12.50

Nuts, Honey, Hops, Etc.

NUTS.

Current quotations remain largely nominal, as values for the new crop almonds have not yet been definitely established. With both California and foreign crops light, however, high prices are expected, and a range of 11 to 18c is quoted in some quarters. Definite quotations are expected in the near future.

Almonds—	
Nonpareils	17½c
I X L	16½c
Ne Plus Ultra	15½c
Drakes	12½c
Languedoc	11½c
Hardshells	8 c
Walnuts, 1912 crop—	
Softshell No. 1	16 @16½c
Hardshell No. 1	15 @15½c
No. 2	10½c
Budded	17 c

HONEY.

Arrivals of new honey are still moving off well, as the amount is very moderate and fancy grades are in strong demand. Lower grades are not receiving much interest, but there is no excessive supply.

Comb, white, new	15 @17 c
Amber	11 @12 c
Dark	9 @10 c
Extracted, white	8 @10 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Quotations stand as before, with supplies light and closely held by local dealers, though there is no great demand.

Light	30 @32 c
Dark	28 @30 c

HOPS.

The hop market has taken a decided turn for the better, and the market is booming at present, with large sales at a range of 20 to 22c. The old stock is entirely cleaned up, and the new crop is

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rapidly being contracted. The Washington crop is said to be very short.

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Live Stock.

Several changes are noted this week, calves being a little higher. Both live and dressed hogs show quite an advance, as arrivals have dropped off and there is a good demand for first-class stock of medium weight. Larger offerings, however, are expected before long.

Grass-fed Cattle—	
Steers: No. 1	6¾@ 7 c
No. 2	6½@ 6¾c
Cows and Heifers: No. 1	5¾@ 6 c
No. 2	5¼@ 5½c
Bulls and Stags	2½@ 4 c
Calves: Light	7 @ 7¼c
Medium	6½@ 6¾c
Heavy	5 @ 6 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¼@ 8½c
100 to 150 lbs	8 c
Prime Wethers	4¼@ 4½c
Ewes	3¼@ 3¾c
Lambs: Suckling	5½@ 6 c
DRESSED MEATS.	
Steers	12 @12¼c
Heifers	11 @11½c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	10½@11 c
Ewes	9 @ 9½c
Suckling Lambs	12 @12½c
Dressed Hogs	13 c

WOOL.

Quotations remain about the same, and there is no great demand in the regular trade, though a ready sale can be found for good clips if the holders are willing to make concessions. Most growers, however, are holding out in hope of better values.

Spring clip:	
Southern mountain, free	8 @11 c
Northern, year's staple	13 @14 c
Humboldt, year's staple	18 @19 c
do short	13 @14 c

HIDES.

The demand is picking up a little and with country hides still scarce, prices have been advanced about ½c.

Heavy Steers, over 56 lbs.	14½c
Medium	13½c
Light Steers, under 48 lbs.	12½@13½c
Heavy Cows, over 50 lbs.	12½@13½c
Light Cows, 30 to 50 lbs.	14 c
Kip	14½@16 c
Veal	17½@19 c
Calf	17½@19 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25@ 50c
Dry	75c@ 2.00

HORSES.

The last auction sale gave very unsatisfactory results, and it is apparent that there is practically no demand here for stock of the ordinary classes, and only a limited market for more desirable types. There are very few horses changing hands anywhere in this vicinity, and it is not expected that there will be any demand for at least another month. Quotations stand nominally as before, but there is hardly enough business to establish values, and it is doubtful whether anyone anxious to sell could realize these figures. It is necessary to hold even desirable stock for some time before finding buyers at any satisfactory price.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80
MULES.	
1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

A westerner who had never seen the ocean was standing on the beach and he asked the beach guard:

"Say, mister, do you fellows sell this water in case folks want to take a sea bath in their rooms?"

The beach guard thought he would "jolly" him along and told him it was fifteen cents a bucket, or two buckets for a quarter.

The man seemed to think that was too expensive and went away. When he came around again it was low tide.

"Great Scott," said he, "but you've sold a lot since morning, haven't you?"

"Farmers," said the fair city visitor, "are just as dishonest as the city milkmen."

"How d'ye make that out?" asked the farmer's wife.

"This morning," said the girl accusingly, "with my own eyes I saw your hired man water the cows just before he milked them."

8 Daily Trains to Los Angeles

QUICKEST SERVICE—SHORTEST ROUTES

SHORE LINE LIMITED	Lv. San Francisco	Third St. Station	8:00 a.m.
	Ar. Los Angeles		9:50 p.m.
	Down the Coast by Daylight. Observation Car, Parlor Car Dining Car. First class tickets only.		
THE OWL	Lv. San Francisco	Ferry Station	6:20 p.m.
	Ar. Los Angeles		8:35 a.m.
	Buffet-Library Car, Standard Pullman, Observation Car, Dining Car. First class tickets only.		
THE LARK	Lv. San Francisco	Third St. Station	8:00 p.m.
	Ar. Los Angeles		9:45 a.m.
Dining Car.	Standard Pullman, Observation Car, First class tickets only.		
COASTER	Lv. San Francisco	Third St. Station	7:00 a.m.
	Ar. Los Angeles		10:30 p.m.
	Chair Cars, Smoking Car, Dining Car. All classes of tickets.		

FOUR ADDITIONAL TRAINS LEAVING SAN FRANCISCO DAILY WITH STANDARD PULLMAN AND DINING CARS. ALL CLASSES OF TICKETS.

Valley Express	Ferry Station	10:40 a.m.
Sunset Express	Third St. Station	4:00 p.m.
San Joaquin Valley Flyer	Ferry Station	4:40 p.m.
Los Angeles and San Francisco Passenger	Third St. Station	10:00 p.m.

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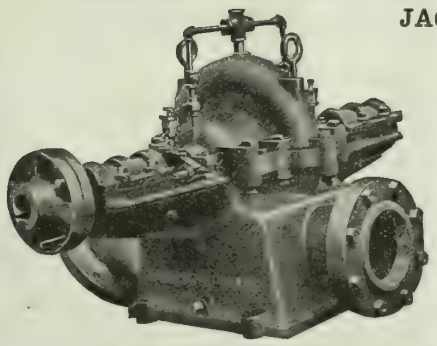

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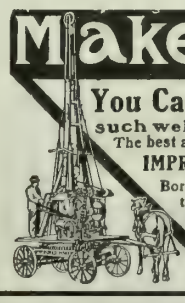

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Bores thru gravel, sand and clay like a streak of lightning. If rock is struck it drills thru that. Forces casings perperfectly. One man and one team can run it. You can make $1 an hour for your spare time.
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Send us your next order for brooms. They are selling from $2.00 to $3.50 per dozen. Dried Fruits of all kinds are in excellent demand. Ship up what you have immediately. Mark and consign all shipments direct to us at S. F.
W. C. PRICE & COMPANY, 209-217 Clay Street, San Francisco, Cal.
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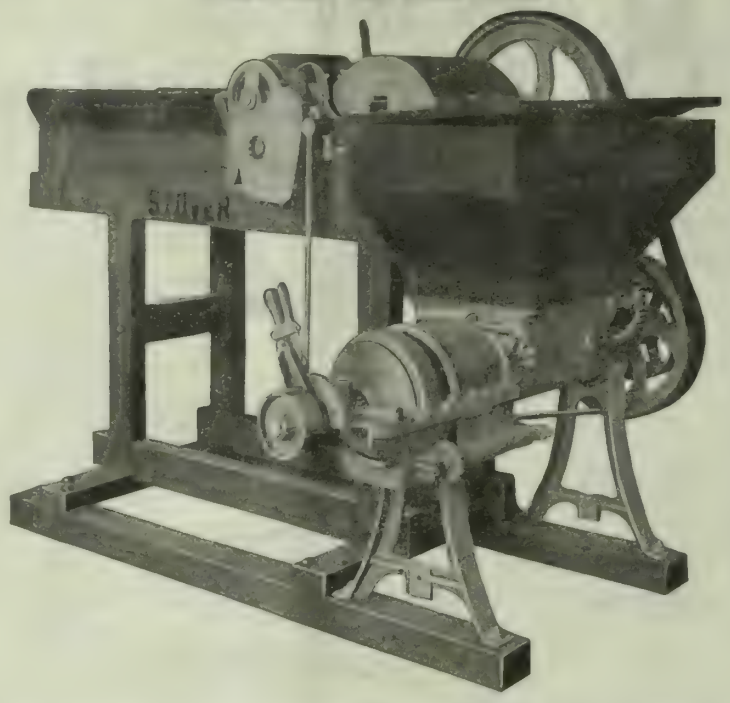
A NEW MILL FOR CALIFORNIA



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Cuts Alfalfa into 1/16-inch lengths, and will grind it as **fine or coarse as you like.** Have you a small acreage? Have you a large acreage? This **STOVER MILL** will save you money.

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The **STOVER WILL SAVE YOU** from $9.00 to $11.00 per ton if you will grind your alfalfa into meal. Capacity, 1,000 to 2,000 pounds per hour.

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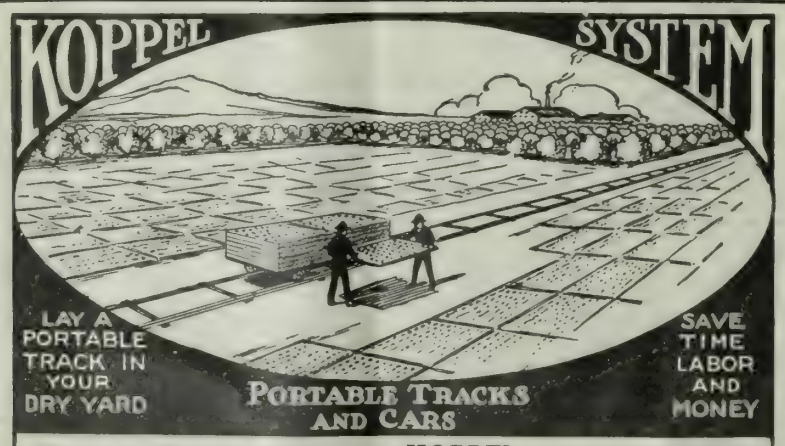

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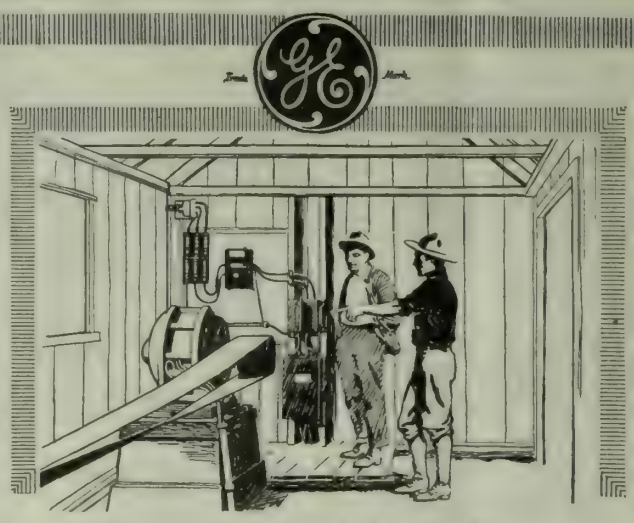

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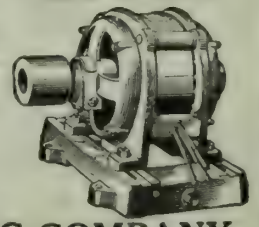

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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 6. SAN FRANCISCO, SATURDAY, AUGUST 9, 1913. Forty-Third Year.

ALFALFA FEEDING METHODS.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

When one asks himself what crop is doing the most toward the development of California today, he is pretty certain to answer, "alfalfa." This State has been widely advertised as the poor man's friend, and if it is such, alfalfa has surely been one of the greatest factors, for a man with a small amount of capital and a 20 or 40-acre field of raw alfalfa land under irrigation has usually been able to pay for the land and in a few years have enough surplus earnings to put up a comfortable home and be what we Americans call independent.

Alfalfa has not stopped in its aid in land development, for never has more interest been shown in it or more acres been prepared for it than at present, and one finds men in every locality who would not be farming today if it hadn't been for this or that season's alfalfa, which kept things running and helped to pay off the mortgage. As we stated, alfalfa has been one of the most certain of the poor man's friends, but it would seem that it should share the glory with live stock, for without live stock in the State to consume the alfalfa, the latter would not be so profitable, and also without alfalfa the live stock industry would be centered largely in districts where good wild feed grows, as in sections along the coast. With all of the good things that have been said of both alfalfa and live stock, there will most likely be a great many points brought out in the future that will give them a still loftier position, if that is possible.

One of these questions which seems to be budding into prominence at this time is whether the true worth of alfalfa as a feed can be realized from feeding it as a single feed, for while everything interested concedes that it is the greatest single feed known, there are good reasons for believing that by the addition of certain other feeds the value of an acre of producing alfalfa would be worth a great deal more to the owner than it is today.

The reason alfalfa is such a good feed is also the reason for adding other foods, that is, it is considered the best single feed there is, but has too great a proportion of some constituents to be entirely satisfactory when fed alone. The nutrients of feed which are necessary for a well balanced ration are protein, carbohydrates and fat, and in feeding stock, for either milk or meat production, the feeder should know approximately what percentage of these nutrients are contained in his ration.

As the proportion of protein in alfalfa runs very high and the carbohydrates are low, it requires some other feed to supply more carbohydrates, to make it evenly balanced. In order to have these other foods to enable him to balance the ration, though, the California farmer has found that he must be able to produce some good, cheap crop on his own place, for where plenty of good alfalfa is grown, it has usually been found that there was little advantage, cost considered, in feeding mill feeds with hay to dairy cattle, except that stock fed in that manner would keep in much better condition and produce a little better.

It is at this point that good feeders are becoming enthused with the growing of corn, to be fed in the shape of silage. The reason for this new interest is that a ration of corn ensilage and alfalfa hay is said to be as nearly balanced as one could wish for, and besides greatly aiding the feeding value of alfalfa, there are other good reasons why it should be used, chief among which are that it greatly benefits the land to carry on some system of rotation.

San Joaquin Valley Alfalfa Ranch.

While alfalfa is a great builder up of soils, land farmed to one crop continuously is a poor practice, and a great many alfalfa growers are beginning to plow up fields which have been seeded six or seven years and to plant grain, sorghum or some other annual plant, for one year or more. Although all such catch crops usually do well on alfalfa sod, they are not nearly so profitable as Indian corn, providing it is fed as ensilage. Another good reason why corn used as ensilage is a benefit is in dry years like the present one, for with one or more silos full of ensilage, the stockman has the best insurance he could purchase, as when silos are properly built and filled, the feed can be carried over for several years, without danger of spoiling

Taken as a whole, it would seem that while alfalfa in the past has put up a good fight to uphold its laurels, from now on it will be aided by the next greatest crop of this country—corn. Stockmen should not forget that there is one other factor connected with good feeding, and that is good stock, for all of the good feeding one can do will not bring results unless good stock is employed to consume it.

This, of course, applies to all kinds of stock, either dairy or beef

(Continued on Page 127.)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Aug. 5, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	T	.24	.11	64	52
Red Bluff	.00	T	.00	102	62
Sacramento	T	.00	.00	96	56
San Francisco	.00	.08	.01	72	54
San Jose	.00	.09	.00	86	46
Fresno	T	.32	.00	100	64
Independence	.14	1.60	.00	94	52
San Luis Obispo	.00	T	.03	82	50
Los Angeles	.00	.00	.00	92	58
San Diego	.00	.05	.00	78	60

The Week.

The partial farewell of the emergency editorial outfit in this column last week simply shows how often and easily a person can slip up in prognostications of the future. The RURAL PRESS is still in the hands of the same outfit that has had it since Professor Wickson left on his work of studying how European financial methods could be adapted to California agricultural conditions. The last word is that he is having a little chance to rest after his strenuous investigating tour and will be here at the finish of next week's preparation of the paper, so this is the last full issue over which the editor will have no more control than his "Out in the World" letter would indicate.

There are a lot of things happening this week for an editor to get excited about, including the appointment of a county agricultural adviser in Humboldt, the beginning of correspondence courses at the University (with agriculture the most popular, of course, as is to be expected), lots of progress in the formation of an irrigation district for the Santa Clara valley, and so on; but these will have to be ignored for the time being, as far as comment is concerned. In just the small space to be taken, it is well to call attention to the new column, which appeared for the first time last week, giving some of the sales of pure-bred stock by California breeders or to California breeders. Anybody who has followed our columns at all closely will have noted the rapid increase of pure-bred stock, the number of new breeders establishing fine herds and flocks in the State, and the purchases of the best dams and sires available by established breeders. We cannot get track of every sale made, but we can of a great many, and our reports of them should be of great value. These reports will be given once a month or oftener. The stockman, by following these sales, can see what breeder in his district is doing most to improve his stock, who is starting up a pure-bred herd, etc., and the pure-bred men can tell of the progress of other pure-bred men. Even the reports of the sales themselves will encourage by their example those who otherwise might continue in the rut of scrub stock and scrub sires. It will do good all around, so whenever a sale of a fine breeding animal is made, don't be backward about reporting it.

Out in the World.

[BY THE EDITOR.]

[In our last issue Professor Wickson sketched some of the phases of organization and operation of the Credit Agricole of France. He now proceeds to other features of this national system of farm finance, and alludes also to the Credit Foncier, a private concern under government supervision, which has come to have about half of its activity in agricultural lines.—ASSOCIATE.]

We have seen in outline the way in which the French governmental system of rural finance, the Credit Agricole, is constituted and the way in which it is operated for "short-term" loans to farmers, on collective personal credit, for agricultural purposes at low rates of interest so that farmers, endorsed by their associates, can get money for less interest and have the use of it long enough to turn over a crop (say for a year), while commercial borrowers have to work on a three-months basis. This is an achievement to which the French official farmers point with much pride, and though it must be confessed that all Frenchmen do not seem to be thoroughly satisfied with it, it may be said that all people are never perfectly joyful over any one thing—especially if it be a governmental thing.

We have in mind now to outline how the Credit Agricole works on a "long-time loan" or mortgage, which usually means, on the continent of Europe, a loan which is never called in because it cancels itself on the amortisation plan in two or more decades, as was sketched in connection with the German rural banking policies. Long-term credit is a newer thing with the Credit Agricole than short-term because the latter was a very pressing need and unprovided for except by the schemes of loan sharks. This was the case in France, as in other European countries, as has been previously suggested. There was always some form of long-term credit by mortgage, but short loans for a farmer's pressing needs, to put in or grow or harvest a crop, were always handled by Shylocks until the co-operative credit societies created a new kind of security, which is now considered the very best security of all, namely, the character of a man as vouched for by his best friends and nearest neighbors.

Long-Term Personal Credit.

The kind of long-term credit which the French agricultural statesmen take most pride in is a loan with amortisation which is based upon collective personal security and not upon visible security or collateral such as a mortgage might attach itself to. That sort of business is done by the Regional banks, and the rates of interest are very low, but otherwise the business is done in ordinary loaning ways on mortgage security, and need not be discussed at this time. What seems more unique, and more recent also, is making long-time loans without visible collateral to twice the amount of the loan—in fact, with visible security no greater than the loan except as security is found in the past and future life of a man, and that man the borrower himself. These are loans for development: the financing of a farmer because his associates believe he will win out and pay his debts.

The movement toward such a provision seems to have arisen from the Government's appreciation of the fact that the rural districts were being depopulated and that something must be done to create more farmers and to prevent young men who knew how to farm from being drawn away from the land to city occupations. To accomplish this it was held that three things were incumbent upon the Government to provide:

1. Long-term loans to help young farmers to get land of their own, and to finance producing establishments.

2. Pensions for superannuated farm laborers, to give them the same old-age outlook which Government empolyees were assured.

3. Protection of crop losses by hail, drouth, frost, or other calamity against which man cannot contend, in the form of crop insurance.

It was believed that these three things would make farm life so much more desirable that young men would decide to stay in the country and not go to the cities, where both present and future seemed brighter to the factory workers than anything the country could offer. Laws have already been enacted providing for the first two of this triad of triumph—the third is still under discussion. We comment briefly:

Loans to Start Rural Families.

The long-term personal security loan law is of recent enactment. It was helped along by the great flood of 1910 which devastated the valley of the Seine and overflowed parts of Paris—in fact, the legislators had to go to the House of Deputies in boats. This experience gave the lawmakers a realizing sense of flood disasters and mellowed their hearts toward the Seine farmers who were destitute. They arranged a way by which a small farmer of good reputation could borrow not to exceed $160 for 15 years at not more than 2% interest. This seems a small sum from an American point of view, but it helped many to get tools, seeds, etc. In another way the law kept many people on the land. During the last three years the Government, through the Credit Agricole, has loaned $3,000,000 to purchase between 3500 and 4000 small farms for that number of young married countrymen, and counts that in this way it has established that number of producing and reproducing families for the good of France. No old people can get into this game: the law requires young men: the Government knows what it is after—just as the New York alderman thought he did when he held that it was unnecessary to buy a dozen gondolas for the lakes of Central Park, for a good pair would answer every purpose. Up to $1,600 will be loaned to a young man to buy a farm, and he will be given more on a short loan to buy stock, tools, etc. When a young man from the country applies for a city job, like that of mail-carrier or a clerkship, he is advised that the Government will start him on land, that will come to be his own, at 2¼% interest, including the killing of the principal. But he has to be the right kind of a young man, as certified by his neighbors. We saw one such who had shown that his father and his grandfather had been farm laborers in the same village and he, too, had done farming. That is the kind the Government is after. They will not take a city man, either old or young, and buy a farm for him simply because he has a vision of himself as a farmer. They insist upon actual farming experience, certified to be of the right sort: all the farm schooling a man has had is to his advantage if it rests upon a foundation of actual farm life. This sort of thing is required of all candidates for Government farming in Europe, except scientific research places, and they go mostly to the higher-ups, to whom the univer-

sities in Europe are open. The great point everywhere in Europe is to get the young country people to farming and keep them away from cities and factories. So far as this one thing goes, the farm-boy of Europe is in a class by himself and all others are excluded.

Loans to Develop Production

Another function of long-term loans of the Credit Agricole is to finance co-operative establishments for increasing and improving production. By a law of 1907, long-term collective security was acceptable for loans to farmers' societies which desired to build and equip dairies, wineries, oil mills, distilleries, and many other things—including a co-operative railway in one district. The society has to raise what money it can by selling shares, and the Government adds twice as much. It is not a gift, but a loan for 15 to 25 years at 2¼%, including amortisation. We saw one concern which cost $12,000 for grounds, buildings, machinery, and raw materials to start with; the society raised $4,000, and the Government put in $8,000. The shareholders can receive 4% on their investment; the Government must have 2¼%; the Regional bank ½% for doing the business—the balance of the net earnings must be distributed to those who contributed material to the product, in addition to whatever they previously received as the price of their raw materials. The Government helps strictly co-operative affairs: it does not undertake to add to the fair interest which the shareholders receive on their capital. Since 1907 the Credit Agricole has helped 300 societies in this way and has placed $2,000,000 of Government money.

Relation of Regional Banks to Old-Line Banks.

We remember writing of the relation of agricultural banks to old-line share banks in some other countries, but are not sure that we have noted the relation in France. It is, however, the same that we found elsewhere. The upbuilding of the banking habit and teaching the people to use borrowed capital profitably has helped the commercial banks in all parts of France to get interest on idle money. The Bank of France cannot supply all the money needed. The Regional banks have to get money wherever they can find it at the same rates they are allowed to charge on their own deposit accumulations—say 3½ and 4%. This is only about one-half the rate which the commercial banks formerly required for loans to agriculture when they would make them at all. Now they have wholly overcome their dislike of agricultural security: in fact, they are keen to get it. We were told that whenever announcement is made of the opening of a new Regional bank, the other banks hasten to offer it the use of their money on the same terms the Regional banks have with the Bank of France. They desire very much to discount farmers' paper which is endorsed by the Local and the Regional banks. The reserve funds of the Regional banks are being increased and their stability is winning admiration. Perhaps the greatest strain which came to one of them was during the serious troubles in the wine districts. The Regional bank of Montpellier had loans of $4,600,000 and was helped out of a dilemma by the other banks. Since its troubles, it has accumulated $140,000 in its reserve fund, and on that basis the Bank of France will lend it ten times as much if needed. In short, the affairs of the Credit Agricole in all its branches seem to be very prosperous, and those concerned with its creation and maintenance are profoundly pleased with their work, which they hold to be humane and patriotic.

The Credit Foncier.

Many of those who attended the rural credit conferences in Paris wondered why nothing was said of Credit Foncier, and this information was supplied toward the end of the sittings in response to a request for it. Credit Foncier had become quite widely known in the United States through references to it in current literature, but few knew its relation to government rural finance, thinking perhaps that it was the official channel for the flow of Government funds to farmers. This is the function of Credit Agricole, as we have explained, and therefore the officials emphasized it almost to the exclusion of Credit Foncier which is, in fact, not official or governmental at all, except that its operations are under Government supervision as provided by the banking laws, and for this purpose a representative of the Government sits on its board of governors. The Government gives no guaranty of its transactions.

Credit Foncier was established in 1852, and since that time it has been furnishing money on mortgages and on the obligations of communes and municipalities for administrative purposes. It is a great financial institution and formerly had nothing to do with rural affairs, but has advanced into that field, and now about one-half of its business is in agricultural affairs. Credit Foncier has now about a billion dollars loaned out: it has a capital of $40,000,000, on which it pays dividends amounting to about 6.4% interest, and its shares are worth about 90% above par. Its share capital was organized to serve as a guaranty for its land transactions. The money actually loaned comes from the sale of bond issues based upon mortgages. Such bonds are issued as more capital is required: bonds being issued up to 80 or 90% of the value of the mortgage. The bonds are sold and the loans paid in cash: the individual mortgagor has nothing to do with the bonds, which are sold in the open market and are popular securities. The borrower pays no commission: he is charged only the cost of notary service in preparing the papers. Credit Foncier receives deposits only from borowers.

The credit assumed is in three forms:

1. Short-term mortgages for not to exceed nine years. These have no amortisation feature and cannot be paid until due.

2. Long-term mortgages for from 10 to 70 years, with amortisation features: these can be repaid in advance of maturity if the borrower desires.

3. Current open accounts on mortgage guaranty. The borrower can use checks to the amount of his mortgage credit, but he pays interest only on what he actually uses: interest being figured every six months. Mortgages for open account can run for nine years or less.

Rates of interest fluctuate somewhat, but have averaged on mortgages at about 4%: at present the rate is 4.3 to 4.5%, while mortgages on factories, etc., are 4.65%; usually agricultural loans are ½% lower interest than loans to manufacturers and traders. Interest on debit balances on open account is 0.3% higher than on mortgage loans. Mortgages on agricultural property are accepted up to one-half its value; on vineyards, to one-third of value.

Such, in brief, is the Credit Foncier. Its function is proudly claimed to be to repay the mortgage indebtedness of France and to render credit liquid. It has handled indebtedness amounting to nearly two billions of dollars since its beginning, and it has, as stated above, about a billion in loans at the present time. Its bonds are believed to be as good as the land they rest upon, and are popular investments.

How a German State Plants Families.

In connection with what is said above about the desire of France to plant new farming families on the land, we recall a promise previously made to mention a German undertaking in the same line, in which a mortgage bank stakes settlers on land which the local government is willing to give to young farmers who will make homes upon it. We have an idea that land was very scarce in Europe, and that people were very abundant. We find, on examination, that both these things are true only in spots. There is a vast amount of idle land in Europe: not only in private estates, but in Government ownership in some countries, while in other countries the Governments are condemning and buying land on which to establish farm homes. Europe not only needs more farmers, but needs them very badly, and is now losing rather than gaining them.

We went out on a vast peat moorland in the Duchy of Oldenburg on which the Government is planting new farmers and endowing them. The land is being drained at public expense and highways being built in all directions. The soil is productive and the crops of the young people whom we visited looked very promising, while their children were strong and abundant. Surely the Duchy will be in much better shape to face coming problems with that broad moor growing fighters and food producers—and so would nearly all European states. They are not yet visibly affected by the world-peace propaganda. So far as we could see, nearly all Europe is getting ready to fight—but that is all incidental.

Of the peat-land farms, the Government gives the land in small tracts and grants ten-year freedom from taxation. The Government credit-bank advances money to build a house and barn (which by local custom are under the same roof), and a traveling instructor tells the new settlers how to handle the land and crops. An official of the bank prepared this ingenuous statement:

"We grant to the colonist a loan of about $1,100; enough to build a decent house. Besides, we give a small amount in cash for buying fertilizers, tools, seed, etc. As security, the property is pledged to us, but we do not go into details as to the value as we do with the regular mortgages, and are satisfied with an attest from the officials that we have sufficient security for the money loaned. In this way the bank has given during the last five years about 400 loans for erection of houses and 200 for cultivation and similar purposes, amounting in all to $500,000.

"We also loan up to three-fourths of the value on small homesteads, owned mostly by farmhands, who make their living on the large farms and ranches. The State assists these people as well as the colonists in case of need with not exceeding 1% of the interest annually due, the means for which are taken from State funds appropriated and set aside for that purpose. In 1912 about $3000 was required.

"From all this you will see that our bank is a source of benefit to our farmers. They can follow their vocation without any anxiety about their mortgage falling due; they can plan new extensions in buying land or the latest machinery, knowing where they can find financial assistance on reasonable terms. Our farmers of late years are striving to have the best as they do in your own great country, and we are sure our endeavors will in course of time also reap their harvest for the Duchy of Oldenburg."

Oh, was he not a joyful banker—giving out money and assuring the borrower that the mortgage would never become due, because his little payments would meet the interest and kill the

principal? He said the Oldenburg farmers are striving to have the best, just as we do in this country. Perhaps they would like to trade bankers with us.

Shall a Farmer Borrow Capital?

Not until we came to France was the question raised as to whether a farmer should borrow money to do farming with. It seemed to be taken for granted everywhere that he should use borrowed capital, just as merchants and manufacturers do: that he should increase and improve production with it and increase his income thereby. It was also insisted everywhere that a farmer should be able to borrow money at a rate of interest and on such time as would enable him to increase his income by doing bigger business. In Paris we asked an official of the Credit Agricole whether any opposition was encountered in the work of furnishing cheap money to farmers. He replied that there were a few economists who argued that it was a great mistake to teach farmers to get into debt: that they ought not to form the habit of borrowing: that they ought to be exhorted to save money of their own earning and make their improvements with that.

We do not care to argue that question on theoretical grounds. Every reader can do that for himself. We do make the observation, however, that wherever we saw borrowed capital being used in Europe it was being used to advantage. Whole districts were increasing and improving their products by the means and appliances which freer capitalization provided, and individual producers were vastly more prosperous than they were said to have been previously. We could see that they were working with more and better livestock, buildings, and machinery than they could ever have become possessed of if they had been obliged to pull themselves up with the poor outfits which we were told they formerly had and which enabled them to make a scant livelihood without chance of accumulations. Beyond this, we can only say that the testimony of those who had been freed from loan sharks and given good appliances and supplies for increased production by long-term credit at low interest, which they secured by their co-operative credit societies, was that they were working under much greater advantages than formerly and reaching much better results.

Lest some may urge that cheap, long-term money would induce extravagance, we must remind the readers that all loans for improvements are made on applications which state exactly what improvement is contemplated and is denied if the project seems to the examining committee to be visionary or the man unfit to carry it out. This supervision is continued after the application is approved, and it is made sure that the money is used for the specified improvement and for no other purpose. If a man gets a loan to drain a field he cannot make a tennis court with it, and if he gets a loan to displace a lot of bum cows with a good dairy herd, he cannot buy a fast horse. Usually the man is using the money of the community for the upbuilding of prosperity of the community, and if he doesn't walk straight his neighbors will have him by the collar. Perhaps readers will say they would not have even cheap money with such neighborly dictation. We are not arguing that proposition at this time: we simply say it works well in Europe.

Bordeaux Treatment for Gummosis.

[By H. S. Fawcett, Pathologist, State Commission of Horticulture.]

The disease known as gummosis of lemon trees in California is characterized by the dying of areas of bark and the exudation of large quantities of gum above the bud union. That certain types of this disease can be induced in large healthy trees with cultures of fungi has been shown as the result of a series of inoculations during the past year. It was first found that typical cases of gummosis could be transmitted from diseased to healthy trees by inoculations with bits of discolored bark or wood cut out at the advancing margins of diseased areas. Bits of exuded gum or pieces of tissue near the centers of the diseased areas already permeated with gum, in most cases failed to transmit the disease.

In making a study of lemon gummosis in the orchards, it was found that there were at least two forms of gummosis, one in which the dead bark remained hard without outward evidence of fungi during the progress of the disease, and one in which the dead bark was at first soft with a later development of fungi upon the surface during damp weather. By a series of inoculations with a number of fungi isolated from both types of the disease, it has been discovered that Pythiacystis citrophthora, the brown rot fungus, is capable of causing the former, and that Botrytis vulgaris, the gray fungus, is capable of causing the latter form.

It has long been recognized that the greater amount of gummosis of lemon trees appears to follow unfavorable soil and cultural conditions such as excessive moisture with the soil above the bud union, poorly drained or aereated land, etc., and methods of prevention have been worked out that have been quite successful in the hands of the best growers. These methods of prevention, such as keeping the soil from above the bud union, keeping it dug up around the crown, putting in lime in heavy soils, avoiding excessive moisture, using sour stock on heavy soils, planting high budded trees and planting them high for new orchards are extremely important. These precautions will largely avoid the conditions favorable for the growth and the infecton of the fungi.

The brown rot fungus lives in the soil, especially in heavy soils, and its development is favored by excessive moisture, and infection of the lemon bark is favored by the bud union being buried, or kept damp. There are, however, certain cases constantly occurring in spite of all that can be done in this way.

The treatment for the gummosis caused by these fungi is still somewhat in the experimental stage. All that can be said at present is that in several groves where the Bordeaux paste was used over a year ago the results appear very promising. This applies only to the lemon gummosis. It is too soon to say definitely as to the orange gum disease (Scaly Bark), except that two growers have told me since hearing of the Bordeaux paste treatment that they had used a somewhat similar mixture two years ago with good results and no injury to the trees.

We can say definitely that Bordeaux is one of the best fungicides known and that in a proportion even stronger than that given here it has resulted in no harm to the bark of trees.

Before applying the paste on lemon trees the bark that is dead to the wood should be removed to allow the Bordeaux to get in to kill out the infection. In case the outer bark is infected over a large area and the inner or cambium is still alive, the outer layer may be scraped off with a curved sharp tool made on purpose for this work, leaving the cambium covered by inner bark still attached. In this way the infection is killed and a new bark is built up under the Bordeaux. One must expect the gum to run out freely for several weeks or months after treatment. One should watch for the formation of new, healthy tissue, rather than the amount of gum that may run out after treatment. The gum that has formed under the bark beyond where any fungus has gone will continue to drain out. The gum itself does not as a rule have any infectious principle in it. The fungus is in the diseased bark at the junction of the live and dead tissue. The fungus does not manufacture the gum but causes the tree to produce it from its own products.

The formula for the Bordeaux paste is as follows:

One pound of bluestone dissolved in 1 gallon of water in a wooden or earthen vessel by hanging it in the top in a sack. Two pounds of unslaked lime, slaked in about one-half gallon of water. Stir together when cool, making a light blue mixture about the consistency of whitewash. Apply with a brush. This may also be applied to healthy bark as a preventative against new infections.

WALNUT TROUBLES.

To the Editor: Enclosed in a separate box we are sending you a sample of black walnuts and we would appreciate it if you could send us any information concerning the trees. They look healthy before they get the disease, but after that they begin to get dry on top, and the leaves get drawn together. Would like to know if any help could be given to prevent it.—C. S. C., Jackson, Amador county.

There are three separate and distinct troubles with these walnuts, blight, aphis and blister mite, possibly more. The black on the nuts may be partly sunburn, but mostly blight. This is also the trouble with the ends of the branches that are black and dying back. There is no cure or treatment that can be recommended. Some trees are more resistant than others and one tree or trees are very susceptible to it. The only way to do with walnuts is to have California black walnuts root and make a good selection for productivity and blight resistance for the top.

The shiny, sticky appearance of the leaves is due to walnut aphis which also are probably the cause of the leaves drawing together. There is no treatment to be advised as yet, either, but both the aphis and the blight are much less serious where the weather is warm and dry, as it should be with you, and it is surprising to see how much aphis damage was done. Around Stockton this summer, where the aphis could be expected to be worse than with you, little or no aphis can be seen, in fact, there seems to be none at all.

The swellings on some of the leaves are the blister mite, spoken of in these columns a week or so ago. They ordinarily appear to do no damage, though when as thick as on some of these leaves, they may weaken the tree a little. There is a possibility that some of the damage in branches is due to lack of moisture in soil, made worse by hot weather.

ALFALFA PLANTING.

To the Editor: On a piece of land which I wish to plant to alfalfa there are two small patches of alkali. Will you please advise me, through your columns, or otherwise, how to treat these patches so that my crop may be as nearly uniform as possible. Also would like to know time, in California, considered best for planting alfalfa.—H. W. M., Walnut Creek.

Drainage is probably the only thing you can do to get the alkali out. You will probably have to put tile drains from there to some lower spot and flood the land to wash the alkali out into the tiles and away, or possibly open ditches would do which could be filled up again after the alkali was removed. In the latter case flood the land and wash the water off quickly in the ditch. Repeat until the alkali is removed. If there is black alkali present you will have to give a good dressing with gypsum, for black alkali sticks close to the soil and gypsum lets it run off with water freely. Possibly, if you have black alkali and the gypsum is applied, there will be sufficient natural drainage to let it go away with flooding. Under any conditions you will find it difficult to get as good a stand of alfalfa on spots on which alkali naturally gathers as on other land, as it will be less fitted for bacterial action and plant thrift.

About the best time to plant alfalfa is in the fall so that it can get up with the early rains to have enough growth to resist frost. It can also be planted after bad frosts have ceased in the spring and almost any other time for that matter

Southern Field and Fruit Notes.

[Written for the PACIFIC RURAL PRESS by R. E. HODGES.]

Lettuce in Los Angeles markets now is soft, streaked with brown, and ancient in appearance. D. W. Irwin thinks this is alrgely because most growers pick every bunch as they come to it. He picks his fields at least three times, taking only the attractive plants. An irrigation shortly before the last cutting fills out the heads that have been soft before on account of crowding.

Three municipal markets were opened in Los Angeles, May 3rd, for vegetables, fruits, and home produce. Consumers go to these markets and buy direct from the producers. Three more markets were opened early in July. Five others are soon to be opened. Some fifteen petitions from residents in other parts of the city are now being considered in the office of F. R. O'Brien, superintendent of Los Angeles municipal markets.

Boxes of sweet corn must be faced with uniformly large ears to catch the buyers' attention. The nub ends should be broken off, but the outer husks must be left on. If taken off, the remaining husks, unused to light and air, will dry and shrivel quickly, making the corn look stale.

Sweet corn may be kept over one day, looking fresh, if the market is dull and the price low. Do not expose more of it to the sun than you must. Keep the boxes of corn piled up, and put them in the shade on your return home. What might be sacrificed now at 15c per box of three dozen may be sold early next day at 30c.

Transplant cauliflowers August 1st to 30th. If set out too late, the heads will be small and will seed so soon after they form that a large per cent will be lost.

Sweet corn planted before August will be ready for the late October market. Fresh corn will then be scarce and high priced, partly because seed is scarce now.

If you have irrigation water, now is the time to plant potatoes for the winter market.

Whatever your crop may be, plant it in straight rows. It will be easier to cultivate, but the biggest difference will be noted in the irrigation. Where rows are crooked, much more water is required, and the obstructing curves will cause washing of soil as well as uneven wetting.

"Irrigate your fruit trees as soon as the crop is off, and then cultivate them," says Ed. Trapp, a progressive fruit and vegetable grower of Los Angeles. "I've had good crops of fruit every year for twenty years, and I think it is because the irrigation and cultivation right after harvest gives the tree every encouragement to produce new growth bearing fruit spurs. Most people do not use enough water because it costs a little over a dollar an hour for 100 inches. If they would use plenty of water they would get regular crops that would pay the cost ten times over.

"I've sold buds from my own trees to people around here who think there is nothing more to do in the fall after the fruit is picked. They come to my place when they are getting crops in alternate years, and say I'm lucky because I have a regular crop. There is no luck about it. It is summer and fall irrigation and cultivation."

Ed. Trapp has four acres in walnuts which yielded last year $600 in walnuts, $500 in cauliflowers, and $328 in potatoes which followed the cauliflower and were harvested in June. He estimates that the walnuts now growing will yield $800 if the price is the same as last year. Southern California farmers have a habit of keeping their land busy and productive. This is necessary on account of the high real estate values. Mr. Trapp has many fields from which he gathers three or four different crops a year; and he is proud of all of them. He has a two-acre peach orchard from which, on July 24th, he had been picking 100 boxes per day for ten days, and many of the trees were still bending under their loads.

Celery planting for Eastern winter markets began on the Golden West Ranch at Schmeltzer on July 1st, and was finished about the last of the month. Four times the gang of 60 to 100 men pulled all suitable plants from the ten-acre seed bed for transplanting to the fields. They have about 210 acres of celery. Cultivation has already commenced on the early plantings.

Imported French cauliflower seed is used on the Golden West Ranch at a cost of $40 per pound. Trapp Bros. grow their own seed at considerable expense, but they make it pay. Unsuitable plants are culled every other day from the entire patch, while they are heading. Trapp Bros. are picking cucumbers for pickles—three to five tons per day from 20 acres—and selling them to the factory at $26.50 per ton. They irrigate every four to six days now.

Any time now is good to prune currants.

Irrigate walnuts just before the shucks begin to crack, and much clubbing will be saved.

Sweet potatoes are making money on soil so sandy that scarcely anything else will produce a crop. They are now well started at setting the tubers, and should have more frequent irrigations from now till the vines cover the ground.

Early green peppers are being bought at 5 to 7c in the field by produce buyers who go after them in autos. They are high priced this year on account of the short crop in Mexico occasioned by the revolutions.

Peppers for the canneries and driers are just setting. They should be picked as soon as ready, for the more they are picked the more will set, until December or January frosts.

Irrigation is the principal need of peppers now. They require more of it, and the lack of it is more disastrous than with most other crops.

In irrigating lima beans, care is necessary to keep water away from the vines, for the pods are borne under them, and if wetted are likely to rot. Blackeye beans may be flooded, because they hold their pods in the air above the vines.

The San Joaquin Ranch, near Santa Ana, makes up partly for the lower yield of lima beans on their dry sandy soil by superior quality.

Popcorn irrigation is just finished. The superiority of California popcorn over that from the East is due to entire lack of water after the silks are well started to drying. This makes the corn so dry that it pops three or four weeks after it is picked, while that from the East requires two to six months.

Everything that hastens maturity of sweet and popcorn after the silks are started, reduces damage from worms; as the kernels harden, the worms find them harder to eat. In slow maturing corn they often work their way half or two-thirds of the way to the butt.

Robert Haenggi selects his popcorn seed from the stalk before the general crop is picked. He keeps it dry all winter, does not test it before planting, and gets an almost perfect stand. California winters are not so destructive to seed as those in the East.

CARE OF RUN DOWN CITRUS GROVE.

To the Editor: I have read with much interest your articles on the fertilization and cultivation of the soil. I would like to have your opinion in regard to our especial kind of soil and conditions. My brother-in-law and I traded for a 20 acre orange grove which had been badly neglected and we wish to get it into first-class shape as soon as possible.

The soil is a gravel adobe. We have already applied 32 pounds of commercial fertilizer to the trees. We have plenty of water and irrigate about every five or six weeks. We find it difficult to find a cultivator that will thoroughly pulverize the ground and put a mulch such as we wish on the surface. Would there be any objections to plowing the ground after each irrigation or would it be an advantage to do so? We are thinking of sowing a cover crop of vetch in September. Do you think this advisable? We can get sheep manure for about $4 per ton. Would this be good for supplying humus, and what would it need to make a complete fertilizer for oranges? What properties and what per cent does a ton of fruit remove from the soil? Do you think it would pay to shoot the ground between the rows?—H. P. D., Porterville.

We would hardly advise plowing after each irrigation. If a disc cultivator will not do the job properly you will have to make the best of it by trying to find just the best cultivator possible from successful growers with soil like yours, and study the management of the soil to see how it can best be handled with the proper tools. If you have an adobe with too little vegetable matter in it you certainly have work before you. This refractory soil will be partly overcome by growing the cover crop you suggest, by good fertilization and proper working. Would say that you were working along right lines.

Would certainly advise growing vetch or some such crop. On similar soil in your vicinity, fenugeek does very well and possibly that would be better, but the experience of successful growers with similar soil will be worth more to you than any advice from a distance.

Sheep manure is a very good fertilizer, one of the best you can secure, both for supplying plant food and humus and it will improve the texture of the soil. As long as your soil is in bad condition and trees run down, would let this and the fertilizer you have already put on, with the cover crop, do the work of bringing the trees back, and would not try to put other fertilizers with it. Very probably some nitrate of soda or lime at the time of turning your vetch under in the spring would be quite a help also.

Your question regarding plant food removed by oranges calls up a rather customary error of view of many persons. The slogan should be "Fertilize the Soil, Not the Crop." In other words, get your soil in proper condition, through fertilization and other methods, and your crop, whatever it be, is pretty sure to look after its feeding in good shape. There is, however, good meat in a knowledge of plant food removed by a crop, and experience has shown that certain fertilizers are better for some crops than others, but until your trees are in good shape your main problem must be in soil improvement, not tree feeding and you will find the trees producing very much better when the soil is improved.

A ton of oranges removes about 3.6 pounds of nitrogen, 1 pound phosphoric acid, and 4.2 pounds of potash.

In such heavy soil, blasting might be found quite profitable, but hardly think we would blast around many trees if your ground takes water well, without first giving a fair trial to other methods of improvement. If the subsoil is very dense it would be good, but unless it is heavier below than in the top foot or 18 inches would be inclined to do no more than blast around a half a dozen trees or so. The latter certainly would do no harm and might do good.

VARIETIES AND THRESHING OF WHEAT.

To the Editor: What is the best variety of wheat to sow (for the best prices and largest yield) for threshing? About how many sacks per acre do they get in other places where the ground is rich and has plenty of moisture for wheat? What is the general price paid for threshing?—Subscriber, Sonoma.

The standard wheat in California is the White Australian, but where the wind is strong the Club is grown, as it shatters much less than the Australian. The Australian might yield a little more, but the difference would not amount to much, as there would be more lost in threshing than with the Club. The Australian brings about $1 to $2 more per ton than the other. Roughly speaking, the yield on good land would be from eight to fifteen sacks per acre. The cost of threshing with a combined harvester might run from $1.50 per ton up. With header and stationary thresher, it would be a whole lot more, but you had better get a figure from the man that will do your work and you will then be better informed than from any generalization we might give.

Saving Santa Barbara Oaks.

The oak is the grandest of California's native trees of general distribution, as is the case in many countries in the temperate region. It is also very susceptible to injury from insect pests, and any methods of saving them are always worth knowing.

In Santa Barbara county they have been having trouble with the oaks through the attack of several boring beetles, and George A. Coleman, of the department of entomology, University of California, after investigation, has written a short account of the reasons for injury and the method of control. Investigations elsewhere where trees are dying will show whether the trouble comes from the same reason.

A very striking point to notice is that the trouble comes from neglect. Keep the trees healthy and they will be resistant to insect or disease. That is true in many cases with many crops.

Mr. Coleman says in part:

While it will require considerable further study to determine the exact relation of all the insect pests and fungous diseases concerned in their death, and to arrive at the ultimate cause of the death of some trees, the preliminary examination shows that at least three species of bark-boring beetles are mainly responsible. Of these, the one which is believed to be the start of the trouble is a twig girdler, the larva of which is found boring under the bark of the small twigs near the end and is the cause of the death of so many twigs on otherwise apparently healthy trees. As soon as these twigs begin to die, another species of beetle attacks them, and the larva is found boring into the heartwood. The attacks of these two beetles, when in sufficient numbers, cause the death of a large number of twigs, thus very much weakening the tree, so that it cannot withstand the attacks of a third species, which, though it is the smallest of all, is the most numerous, and belongs to the Scolytidae, a genus of bark-boring beetles very destructive to oaks.

Start in Bad Wood.—This third species, known under the scientific name of Pityophthorus pubipennis Lec., normally breeds in recently cut oak wood, limbs broken off by storms, or in trees which are nearly dead from other causes. The entrance is made by the adult beetle, usually the female, through a hole in the bark, hardly larger than a good-sized pin, and on reaching the cambium or sap-carrying layer of wood just beneath the thick outside bark, the female makes a short transverse gallery in this soft layer, depositing her eggs in little notches along the edges. These eggs soon hatch into tiny larvae, which are very voracious feeders, and starting out at right angles to the parent gallery, they soon make their way for a considerable distance from it, destroying the cambium, which is the life of the tree, as they go. When numerous enough, as they are at present, their entrance holes may be found covering the entire surface of the larger limbs, the entire body of the tree, and even the larger roots just beneath the ground. As their work of destruction is carried on underneath the bark, there is sometimes no outward sign of the death of a tree until the larvae have entirely covered or at least entirely girdled the tree trunk just above the ground, which it its most vital point, the flow of sap being thereby entirely cut off, and the tree dies very suddenly. The entrance of these beetles may be discovered, however, by the appearance of numerous small discolored patches on the bark of the trunk and larger limbs, each of which marks the entrance of a beetle, the discoloration being caused by the flow of sap from the hole.

Where such a large area of territory is affected, it may seem a hopeless task to undertake any treatment to save the trees. The fact, however, that these pests do not normally breed in a perfectly healthy tree is of great assistance to us and points a way to the remedy. The probable reason for the appearance of these insects in such numbers is that they have found a large number of neglected trees, fallen or cut limbs, and trees cut for wood and left lying on the ground, furnishing the right condition for their breeding in immense numbers, until now they have become a menace to the living trees. It is believed also that a fungus which attacks the leaves and branches and possibly other wood-destroying fungi working on the trunk of the tree, may be responsible for the death of a few trees, which also furnish breeding places for the insects. This, however, is a matter for future study and consideration.

The fact that the entrance holes made by the beetles in the bark are so small, and are immediately closed, make it an impossibility to reach them by means of a spray or fumigation after they are in the tree, the only possible chance of reaching them by these means being to catch the adults before they have entered the bark, or by treating the trees after they are dead and still contain the larvae and adults. It may be that further study will reveal some parasites and predacious enemies which will at least assist in their control.

Methods of Control.—The immediate solution of the problem lies in the reduction of the number of beetles by the destruction of the larvae and adults while still under and in the bark of the dead and dying trees.

The most effective treatment to be followed at present is a campaign of cleaning up and burning all the dead branches and dead trees which are past recovery. If it is desirable to save the wood of dead limbs or trees, such limbs or trunks may be treated by building a fire of the smaller branches and throwing the limbs and trunks containing the beetles and larvae on this fire, where they should be left for at least half an hour until the sap in the bark and wood becomes thoroughly heated and generates sufficient steam to kill all the larvae and adult beetles. This method was tried under the author's direction and proved entirely successful. When carefully done, every insect in the wood or bark will be killed. All stumps should be either dug out and so treated, or have the earth dug away from them so as to expose the larger roots and have a fire built on top of them. This will take care of the small beetle which works on the larger branches and trunk and is responsible for the immediate death of the trees; but in order to control the twig girdler, which is believed to be the first cause of the trouble, it will also be necessary to trim off and burn all of the dead twigs which are now so numerous on otherwise healthy trees. If a very valuable tree is found to be affected, but is still alive, and it is desirable to save the tree, it should be well cut back, all the dead and dying limbs removed, and the tree stimulated by giving it plenty of water and even some fertilizer and cultivation.

This campaign of trimming and burning should start at once and be continued until thoroughly completed, as right now seems to be a very active time for the beetle in the trunk and limbs, and the larvae of the twig girdlers are still mostly in the twigs, while later they will have developed into the adult beetles and these will have gone to fresh twigs.

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Plan of Co-operative Organization.

To the Editor: I would like to obtain information regarding the plan of the dried fruit association that I understand has been organized the past year in the northern part of the State, also its success and general information regarding it, to be used in considering an organization in this locality. I have the RURAL PRESS on file and if any articles have appeared, will you kindly refer me to the issue. Thanking you for giving me the address of proper parties to write to, I am C. F. C.

Fresno.

An account of the California Cured Fruit Exchange was given in the issue of February 1, 1913. You can also write the Exchange, Sacramento, for by-laws and constitution, both of the Exchange and of Associations which go to make it up. Although the organization has been described, we can give again very briefly an account of its methods, for those who have overlooked the matter.

The unit of operation is an association. There are at least sixteen such associations organized already and others in process of formation. Other associations can be formed in any part of the State where dried fruit is produced and work to full advantage. The associations are formed on a purely co-operative basis, only a nominal membership fee being required, and the operations are conducted on credit until such time as the earnings will pay for equipment, etc. It is exactly the same basis as the units of the California Fruit Growers Exchange (the citrus organization), the Walnut Growers' Exchange, and the Almond Growers' Exchange are formed upon.

The fruit is graded and pooled and sold for the associations by the central Exchange at cost price, any charges that are taken out more than are needed being returned to the associations at the end of the season. The same thing is done with association and individual member.

As we understand it, the Exchange has sold a large part of the hold-over crop of 1912 for several of the associations, although its main activities were to begin with the 1913 crop, and it also seems to be doing well with the present market. At least, the progress has been rapid in obtaining support all over the northern and central part of the State as far south as Modesto. The officers have been backward about extending operations farther into the San Joaquin valley in order not to trespass on territory of the California Associated Raisin Co., or the proposed dried peach company. The Exchange gets out market letters frequently which will give you an idea of progress, but would advise anybody wanting detailed information to write direct to the California Cured Fruit Exchange, Sacramento.

ALFALFA FEEDING METHODS.

(*Continued From Page 121*)

cattle, hogs, sheep, or horses, and it is the lack of good stock that causes many farmers to think that prices of alfalfa land are going too high, when in reality, by using better feeding methods and a higher grade of stock, good alfalfa land would make interest on a still higher valuation.

In concluding, it should be said that alfalfa has done more to save the stockmen, in dry years like the present, than any other one thing, and the time will likely come when dry years once in a while will have very little effect on the stock-raising industry, due to alfalfa.

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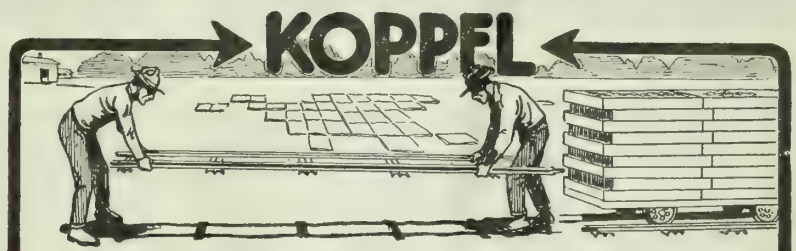

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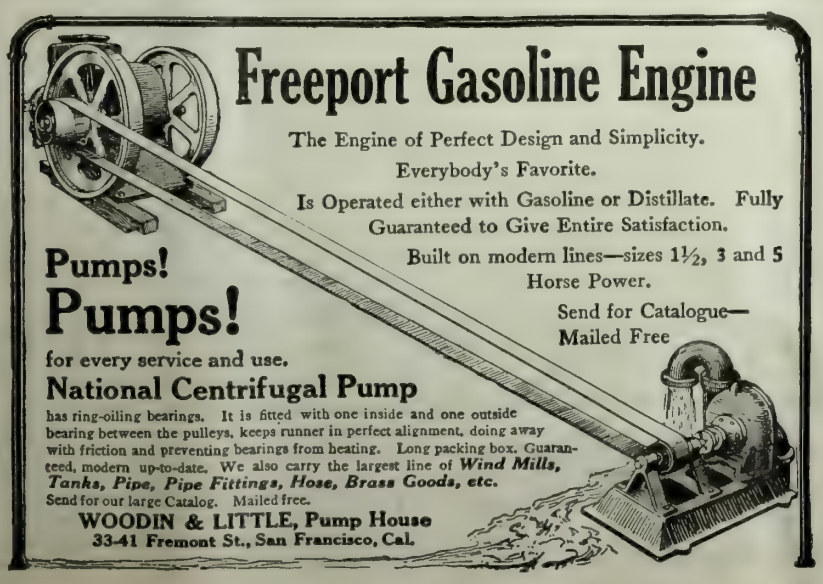

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Work at the University Farm School.

[By Our Associate Editor.]

On September 19 to 22 the University Farm School at Davis will open for another year's work. In several important ways this is the most important institution in connection with agricultural education in California, or should grow to be so, for it is the institution that has as its basic purpose the training of young men and young women for successful farming.

The College of Agriculture ranks far ahead of it in agricultural education in the scientific sense, and will continue to do so, but with this difference—the University Farm School has as its main purpose to train men to be farmers (as much as a school could do such a thing), to take young men and women of little more than high school age and teach them those points about farming which will be most needed in farm work and management. The College of Agriculture, as a part of the University of California, will have as its purpose to train men for agricultural investigation and scientific work, or for teaching and as well to instruct in the scientific and underlying principles of farming those persons who expect to be practical farmers but also want to go deep into the theory of agricultural practices. While the college is turning out one man for actual farm management, the school will turn out many. That is why it is stated that the University Farm School is the institution to be of leading importance in farm education in California and therefore of direct interest to every farmer whose sons or daughters might some day attend there, or whose neighbor's sons or daughters are quite sure to do so.

The farm itself as a State property is as yet very new, the authorization for purchase being made only in 1905, and it taking quite a time to make the selection, and more time before much could be accomplished in development. In the few years that the School has been open for instruction it has gone ahead rapidly and is making a name for itself.

The Farm itself, as most of our readers know, is located at Davis, Yolo county, along the north bank of Putah Creek and comprises 779 acres of fine alluvial soil. The equipment includes adquate buildings for instruction in practical agriculture and horticulture, among which are a commercial creamery, stock judging pavilion, horticultural building, dairy barn, cereal building, mechanical shops, poultry building, two dormitories and one dining hall. New buildings provided by the 1913 Legislature include a new dormitory, the enlargement of the dining hall, and new class room and library buildings.

At this school a person can get three years of useful training, chiefly in agriculture, an age of 18 years or more being required for entrance. If the applicant is a graduate of a high school, he can complete the work in two years. If not a high school graduate, he must pass an examination in English and arithmetic and approximately one year of the three will be given to general education.

If a person attends this school he can either live at the Farm, or live outside it and take exactly the same work as a student who lives at a dormitory and boards at the dining hall. If the student wishes to live on the farm he can get board at the school dining hall for $20.00 a month and get a room in one of the dormitories for $6.00 or $7.00. The cost when two persons share a room is $4.00 or $5.00 apiece. Books and regular school supplies cost from $15 to $25 per year. The tuition itself is free, though a registration fee of $5 is charged to cover incidental expenses. The necessary expense for residents of the State for the eight months' course is $251, but it is possible for a limited number of students to earn part of their expenses by labor about the Farm School, and if a young man will take about a year extra, he can often work his way through the whole course.

The courses offered include agronomy, agricultural botany, animal industry, chemistry, dairy industry, English and history, entomology, farm mechanics, horticulture, hygiene, irrigation and surveying, mathematics, plant pathology, poultry husbandry, veterinary science and viticulture.

There is an excellent lot of livestock and poultry on the farm, the stock including high class animals of the various breeds of beef and dairy cattle, horses, sheep and hogs. There is also a faculty including men that have been noted through the country in their line of work and besides the resident faculty, instruction is also given by members of the faculty of the College of Agriculture at Berkeley.

A large enrollment will take place this fall, larger than last year, which almost overcrowded many of the accommodations and this growth will continue, it can well be expected, unchecked when the work of the Farm School becomes better known throughout the State. Any person wanting more information should write to the University of California, Berkeley, for the recently issued bulletin on the subject, or to the Dean of the Farm School, Davis.

The short courses for the year will continue from September 29 to November 15 and will include general agriculture, dairy production, dairy manufactures, poultry husbandry, animal husbandry, and horticulture and viticulture. No educational qualifications are required for these and information regarding them can be had as mentioned in preceding paragraph.

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Protect the Parcels Post.

[In spite of the fact that some time ago there was lots of kicking because the parcel post was not what its critics thought it should be, there was great joy throughout the country, especially in rural districts, when the present system was established. Its supporters now are up in arms to protect it against a pretty serious attack. For whatever its faults may be, there is the advantage that the Postmaster General is authorized to make changes in rates when said changes seem advisable, and that permits the improvement of any essential faults of its present condition. The Postmaster General is using this power to make an excellent change, and some people in Congress want to prevent it. This situation is explained in the following letter from W. A. Henry, emeritus Professor of Agriculture, University of Wisconsin. The parcel post will win if farmers live up to his advice.—Editor.]

To the Editor: On this, my sixth visit to Washington in the interest of parcel post, I find a condition which should interest every reader of your paper. The parcel post law contains a vital clause, proposed by the "Parcel Post Congressman," Representative Lewis of Maryland, giving the Postmaster General power, by and with the consent of the Interstate Commerce Commission, to change the zones, the weight of parcels, the carrying charge, and all conditions of mailability. Acting upon urgent requests from all over the country, Postmaster General Burleson, after most careful study, with the permission of the Interstate Commerce Commission, announced that on and after August 15, 1913, the postal service will accept parcels weighing up to 20 pounds as follows:

On rural routes only, at a charge of 5c for the first pound, and ½c for each additional pound, or fraction thereof. The first zone is increased to 150 miles, airline, from the receiving postoffice, and the carrying rate reduced to 5c for the first pound and 1c for each additional pound. When this ruling goes into effect a farmer can send a 20-pound package for 15c to his postoffice, or to any person on his own rural route; or 20 pounds to any postoffice within 150 miles for 24c. Thus, the weight is almost doubled and the rate cut about in half. Thereafter, ordinary postage stamps are to be used, instead of the special stamps now employed. These changes will make the parcel post service ten times more valuable than now.

But there is no peace in this world. Already there are rumblings and grumblings here in Washington, in all probability originating with the express companies, and possibly with the railroads. It is proposed to take away from the Postmaster General the power to improve the parcel post service, even with the consent of the Interstate Commerce Commission. But is not this delegation of power as now expressed in the law, just what it should be? How can Congress which each session is called on to consider about 40,000 bills, ever attend to all the details of our great postal system, which so vitally affects every citizen? It will be time enough to limit the powers of the Postmaster General when it shall have been found that he is working against the wishes and needs of the people in postal matters—till then, by all means let the present law stand.

To head off this sinister purpose, and thereby save parcel post, each and every farmer should at once write a brief, courteous letter to his two senators and his representative in Washington, urging them to leave the present law alone and stand by Postmaster General Burleson in his effort to improve the parcel post service. Now is the time to tell your congressman how valuable the parcel post system already is, and how much you approve the proposed changes. Write and mail these letters at once, for there are forces at work the aim of which is to tie the hands of the Postmaster General and once for all destroy the efficiency of the parcel post system.

Do you want a still better parcel post? Speak out now, and speak plain.

W. A. Henry.

APRICOT ON ALMOND.

To the Editor: Will you kindly inform me through your paper if apricot trees on almond root, planted in fairly light soil with good drainage, will do as well as 'cots' on 'cot' or peach root? Everyone here has a different idea about the subject. Any information on the subject will be greatly appreciated.—E. F. L., Esparto.

The following from California Fruits will say about all that is to be said on the subject and straighten out a number of points: "The almond should as a rule be rejected as a stock for the apricot. Hundreds have tried it, and found that the scion never made a good union with the wood of the stock, but was knit to it only by the bark, and is, therefore, easily broken off by the wind. It may grow well and sometimes gets to be two or three inches in idameter before it breaks off, thus wasting much time for the orchardist. Whole orchards worked in this way have been a loss and a disappointment.

"A few growers, however, approve the almond and use it with the idea that it gives larger fruit. It has been claimed that the Royal apricot will take well on the almond seedling by root grafting instead of budding, using the side graft. The apricot may also be made to hold on the almond by double working, growing first as a shoot from a peach or plum bud, and then working an apricot bud higher up on in the new shoot."

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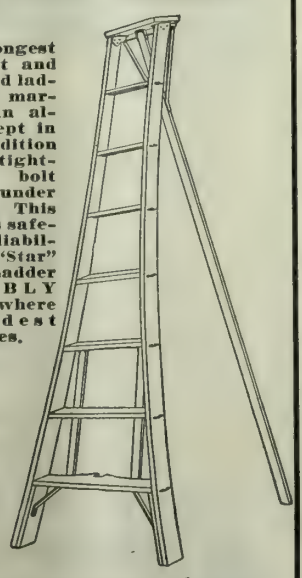

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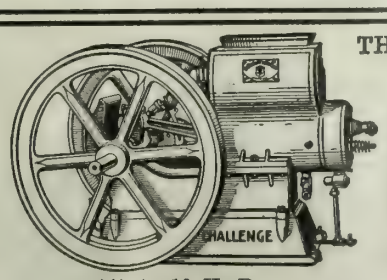

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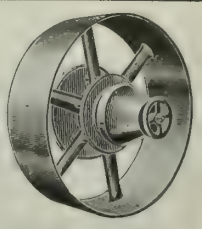

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AGRICULTURAL REVIEW.

With the Fruit Men.

Reports from Gilroy state that the prune crop was damaged fully 30% in that section during July from sunburn.

The high prices that have been received in the East for fresh peaches, the shortage of the crop and the large amount being absorbed by the canneries all tend to shorten the dried peach tonnage for the season. It now looks as though the amount to be dried will be much less than normal and that prices for the cured produce would raise very materially.

B. V. Sharp, the horticultural commissioner of Kings county, reports that fully 40% of the prune crop there has dropped to the ground during the past month as a result of hot weather and dry ground.

The apple crop in Sierra county will be up to normal this year. Already apples are being shipped and cider made from this year's crop.

The almond harvest in portions of Butte county will commence very shortly. The tonnage will be light, owing to late frosts and dry weather.

In an interview in the San Jose Times recently, W. S. Clayton of the First National Bank there, stated that 5½c. prunes were in sight. Owing to the light crop, the growers will be particularly glad to get the higher price. We saw the contract the first of the week which covered the crop of a grower near Mountain View at 4½c per pound for prunes with a base of 80s, with points higher for larger sizes. The 5c price paid during the past week was for 60s or better.

The Lodi Sentinel states that many of the table-grape growers are selling Tokays at a fixed price per ton, rather than take the chances of low prices in the East. Most of the contracts made are for $25 per ton for August deliveries, $20 up to September 11th, and $14 for the remainder of the month, and $20 for the balance of the season. Some contracts are being made at $20 for the season. The Tokay crop is ripening fast, and some will be ready for the market by August 15.

M. C. Kaufman, of Graton, Sonoma county, has completed the picking of the loganberry crop on 2½ acres, from which the yield was 5½ tons per acre. The vines are two years old.

The Durham Almond Growers' Association reports selling the entire crop of its members, amounting to about five cars, to E. T. Reynolds & Son.

California State Fair.

The long-looked-for premium list for the California State Fair is now off the press at the State Printing Office, and the task of mailing has been started. The premiums contained in this list amount to about $25,000, which is $5,000 larger than last year. These increases have been made necessary by bringing up the awards to a higher standard, which naturally will benefit the many exhibitors who make the State Fair so successful.

Livestock entries must be in by August 14th, poultry entries by September 1st, and entries intended for the industrial and agricultural departments by September 6th. The Fair opens on September 13th, and closes on September 20th. There will be a rush of entries for these various departments, so those that are first in the hands of the Secretary are very likely to receive the best consideration. Entry blanks will be furnished along with the premium lists.

The premium list will be mailed to anybody interested in making an exhibit, upon request to J. L. McCarthy, Secretary of the California State Agricultural Society, Sacramento.

Corn may be grown in California as successfully as in the corn belt of the Middle West, and to prove this the State Agricultural Society will offer special inducements to corn-growers exhibiting at the State Fair next month. The Western Pacific Railway Co. is joining forces with the State Fair in offering $50 for extra awards for the heaviest yields of corn to the acre and the best samples of this product. The State Fair $120 prizes are divided into eight classes of $10 first and $5 second prizes for the following exhibits: ten or more ears of yellow corn, ten or more ears of white corn, ten or more ears of sweet corn, best exhibit of corn on the stalks, best exhibit of forage sorghum, best exhibit of Egyptian corn, best exhibit of Kaffir corn, best ten pounds of seed corn, any variety. Corn-growers who have not been making a specialty in selecting corn of this standard may hesitate in getting up an exhibit, but when they take into consideration that the keen competition in growing fancy corn has not been as active in California as in the corn belt, they may well take a chance with the corn that lacks some of the qualifications of the perfect ear.

Hop Crop Good—Prices High.

Hop-growers are now busy picking, and as the harvest progresses it is found that the crop will be about 90,000 bales in this State, and for the Coast about 300,000 bales, or as large a crop as last year. During the past week prices have jumped 5c per pound and are now strong at 20c. The raise in price was caused by the crop shortage in England and Europe. About three-fourths of the crop had, however, already been sold.

Trouble occurred last Sunday in the Durst yards, at Wheatland, over the price paid for picking hops, in which four people were killed and several wounded. Learning that some of the help were making threats against the Dursts, and also the peace of that section, District Attorney Manwell accompanied by the sheriff and several deputies, went in an automobile to the scene and endeavored to secure a peaceful solution of the trouble. Finding that talking did no good, the officials attempted to arrest some of the more turbulent, when some one started shooting, which resulted in the killing of four people, among them being the district attorney and a deputy sheriff. Governor Johnson called out several companies of militia, which have since kept the peace.

Agricultural Notes.

Beet harvest commenced last week in Glenn county. The crop will be slightly under normal on the west side of the river, but in the Colusa, Grimes, and Woodland sections it will make full yields. ....

Turlock farmers are having a prosperous season. Crops are good and shipments heavy of watermelons, cantaloupes, peaches, and alfalfa hay. Prices so far have been better than usual. Last Saturday watermelons brought the growers $18 to $20 per ton.

The honey crop in Kings county is now being harvested. It is stated that the output will be a little less than usual.

Potatoes in the Klamath Falls section promise a large yield this season. The acreage, however, is somewhat less than last year.

Congressman Raker, of California, has introduced in Congress a bill to provide for the inspection, in any State having an inspection system, of any fruit, seed or plant which the State requires to be inspected. Such package must be plainly marked to indicate the contents, where grown, and name of shipper. Suspected packages will be sent to a central post-office in the State for inspection and treatment before being delivered.

The barley harvest is now on in full swing in the Tulare Lake district. The crop is very good, and it is estimated that it will total close to a million sacks of better than 100 pounds to the sack. Much of the grain is being shipped, but some growers are holding for $1.50 per sack.

The sugar-beet plants at Visalia and Hamilton City commenced the season's campaign last Monday. The Visalia plant has not been operated for the past two years, and will have only a part of a crop this year, owing to damage by cutworms. The Hamilton City factory has a good crop to work on, and will probably handle 85,000 tons of beets.

H. G. Turner, of the Grange company at Modesto, estimates the value of the alfalfa crop in Stanislaus county this season at $2,000,000. He further estimates the wheat yield at $250,000, and Egyptian corn, barley, and beans at $250,000.

The San Joaquin Poultry Association has set November 17th to 22nd as the date for its annual poultry show. The association plans to hold the largest show in its history this year and will have entries from many of the Western States.

Land Improvement.

Plans are being made for the impounding of water in a big reservoir to be built near Forbestown with a capacity to irrigate 15,000 acres. The Bangor and Wyandotte sections will get most of the water for their orange and olive land.

The El Rio Rrancho of 1400 acres, on the Sacramento river east of Corning, was sold last week by the R. A. Foster company to Sacramento parties for $150,000. The ranch is already seeded to alfalfa in part and the rest of it is to be cleared of the trees and more alfalfa set out.

The Swan tract of the Talbot ranch, near Willows, which has been used as a grain ranch for years, is to be improved by having irrigation wells bored, and if sufficient water is found part of it will be planted to alfalfa and citrus orchards.

The Grayson estate has sold the 18,000-acre Horseshoe Ranch, located near Winnemucca, Nevada, to San Francisco parties. At present Miller & Lux have a lease of the property and have 10,000 head of cattle there. Symmes, Means & Chandler have handled the engineering part of the deal.

An effort is to be made to colonize the Melga Rancho, near Guernsey, Kings county. This tract contains 6,467 acres and has on it over 2,200 acres of alfalfa and 2,000 acres planted to grain.

Big Prizes Offered.

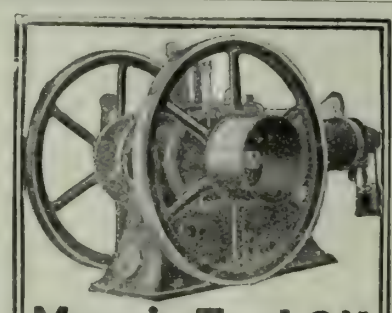
D. O. Lively, chief of the live stock division of the Panama-Pacific Exposition, has appointed I. D. Graham, of Topeka, Kansas, his assistant chief, who will be in charge while Mr. Lively is away on a trip through the Eastern States. Mr. Graham arrived here last week and is, we believe, the right man for the place. For several years he has been the livestock editor of the Kansas Farmer.

The livestock department will have $175,000 to be awarded as cash prizes, divided as follows: Horses, $50,000; cattle, $50,000; sheep and goats, $25,000; swine, $25,000; poultry, pigeons, and pet stock, $12,000; carloads of cattle, sheep and swine, $7,500; dogs and cats, $5,000.

Supplemental prizes in cash as well as trophies of plate, diplomas, etc., are also offered by clubs and societies. It is probable that the aggregate prizes will be larger than ever before offered at any live stock show.

Miscellaneous Notes.

A meeting of land-owners was held at Campbell last Saturday to discuss the feasibility of organizing a big irrigation district in the upper part of the Santa Clara valley. It is stated that water for irrigation can be secured from the Almaden and Guadalupe creeks in the Santa Cruz mountains, which, by build-



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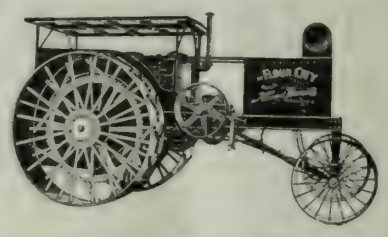

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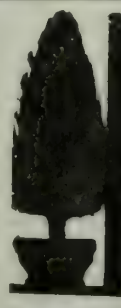

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ing storage reservoirs, would furnish water to cover 50,000 acres of fruit lands.

According to dispatches from Kansas, parts of that State have suffered severely from drouth during the past six weeks. Central Kansas is hauling water for stock; more than thirty towns have shut off water for lawns and some have hardly enough for drinking purposes.

Humboldt county has the first appointment to the newly created office of the University of California farm adviser. A. H. Christenson is the man named, and his salary will be paid in part by the University and part by the county supervisors and the rest by the Humboldt County Dairymen's Association. His duties will be to give free advice to all who ask for it.

State Fair Exhibitors Notice.

Entries for exhibits for the State Fair close as follows: Live stock, August 14th; poultry, Septembest 1st; industrial and agricultural exhibits, September 6th. Secure entry blanks and premium list from J. L. McCarthy, secretary of the State Agricultural Society, Sacramento.

RULES FOR TREE PLANTING.

Windbreaks are very necessary and profitable things to have, and the Forest Service has prepared ten rules for planting which anybody will do well to notice. These are: Place the windbreak at right angles to the direction of injurious prevailing winds. Devote from one-eighth to one-fifth of the farm to timber. Its protective value more than pays for the ground it occupies, to say nothing of the timber yield. Plant only species suited to windbreak use, to the region and to the locality. Plant rapid growers for quick results; but underplant with slower growing species, which are usually longer lived and more valuable.

Supplement a deciduous windbreak with evergreens to afford protection in winter. Separate trees by the spacing proper to the species used. The trees should be close enough to produce a dense windbreak and to yield good poles, but should not be so crowded as to produce spindling growth.

Make the windbreak thick from the bottom up, especially on the side toward the wind. This may be done by using species which branch near the ground, by planting outside rows of low-growing trees, by encouraging natural reproduction, and by underplanting.

Cultivate the plantation thoroughly while it is young. Do not allow excessive grazing where reproduction is desired. Do not thin your woodlot too heavily or take out the best trees for minor uses. Remember that a timber tract should be improved by use and that each clearing should leave it in better condition than before.

PRUNE PRUNING AND PRUNE RIVALRY.

To the Editor: I was more than surprised to read what Mr. Coates said in your issue of July 19, namely, "that it is generally accepted as a fact that the French prune requires little or no pruning."

Mr. Coates must never have visited Sonoma county, where the prevailing idea is that prunes must be kept open from the top and the sunshine let in. I have been associated with prune growing for the past 18 years, and don't remember one year that my orchard did not get pruned some. Of course there are years when the pruning is light, but the trees never missed a going over.

It makes me tired to read all the comments on prunes, and that all prunes and prune growing in California is associated with Santa Clara county. The fact of the matter is that Santa Clara's never began to be such prunes as are produced in the Russian River valley in Sonoma county. They never had to irrigate there and the prunes grown in that district are some of the main factors that have helped build up Santa Clara's reputation.

Men that would sell their birthright for a mess of pottage used to sell their best prunes to Santa Clara packers, holding back the recognition of their own county. But at last, like all truth, it is coming to be known that "Sonoma county grows the best prunes," and the orchardists prune their trees and look well after insect pests, too. I don't live there any more, so I am not talking for self interest, but I do wish Mr. Coates would take a trip up there and visit the orchard of S. L. Wattles, south of Healdsburg, and his neighbors; he will find trees there that are long on production and looks both.

Pomona. SUSAN SWAYSGOOD.

As far as we can see from a careful reading of Mr. Coates' article on French prunes in France and California, there is no reference to any particular part of California, and any exception taken to the ideas expressed therein as a reflection on one part or another of the State lies more in the jealousy between Sonoma county and Santa Clara prune growers than in anything contained in the article. For all that can be seen, there are no special differences in pruning between the sections, nor in the prunes, some growers in each section caring well for their orchards and some, too many in fact, going along in a happy-go-lucky way.

If there is a single orchard pruned in French fashion in California, the fact should be known. Probably Mr. Coates would know of the orchard if it existed, for he has had very long experience in prune growing in California, a good part of which was north of San Francisco bay, has observed widely and carefully, and in his work as a nurseryman and otherwise has studied the subject thoroughly. We still fancy that the California growers who prune most are still far from European methods and do more in removing leaders and water-sprouts than in actual shortening up of fruit wood, which is the type of pruning practiced in Europe and in California on other trees than prunes.

SUPPLYING LIME TO COWS.

The simplest and best method for supplying lime to cattle is to use pulverized bone or bone-meal and mix it with a bran mash, or make a lick with bran and a little salt with which the bone-meal is mixed.

Care should be taken to see that the bone-meal is obtained from a reliable source, so that there will not be any possibility of introducing disease, and the farmer might take extra precaution by pouring boiling water on the bone-meal before use.—Agricultural Gazette, New South Wales.

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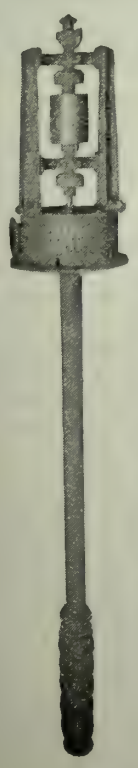

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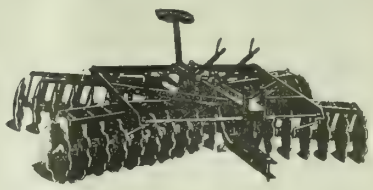

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What Cows to Sell.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Whether to keep the dairy stock and sell the hay through the cream check, or whether to sell the hay to buyers and dispose of the stock, is one of the many perplexing problems confronting alfalfa-growers this year. On the one side, hay buyers are offering good prices and dairy cattle have been getting cheaper as the year wears on, thereby causing the investment in stock to shrink, so to speak. On the other side are several good reasons for not selling the stock, the main ones being that hay cannot stay at present prices in normal rainfall years, and when hay gets cheaper cows will be higher; therefore, the man who sells now will be out money when he buys back other stock; and last, but by no means least, every head of stock on a place is a direct benefit to the soil, in the way of fertilizer.

When It Pays to Sell.—As there are two sides to the selling question, so there are two classes of dairymen: one who should sell and one who should hold.

As everyone familiar with the State's dairy industry knows, the majority of our herds can stand a good deal of culling, and it is almost invariably the case that, where a man is found who has not made money out of cows and hogs in the past, poor stock was the cause. That the average herd has too many "star boarders" may be seen from the reports of every testing association in the State. As these associations are mostly composed of progressive dairymen, the stock should be the cream of their community; but although we have talked with a great many members of the different associations, we have yet to find the member who did not find one or more cows entered that had actually cost more to maintain than they produced. For this reason it seems logical to state that a great many dairymen had better dispose of their stock this year, or at least do some strenuous culling, and sell their hay, because if one's herd will not pay well with cheap hay, such as we have had in past years, there is very little hope for them with hay at present prices.

While it is impossible to predict with any degree of accuracy what next year will bring forth in the way of hay and cattle prices, those who have studied the question seem to agree that high-class dairy cows will always produce enough to hold their valuation up to its present level, but that alfalfa cannot hold its high level of this year, due to the large acreage which is yearly being added to. Therefore, it seems that while it may be good business to sell parts or all of those herds which are unprofitable, the point should not be lost sight of that cows will be cows when hay prices drop. Another thing which the present seller should remember when buying next time, is that if he will use more care in the selection of his next herd it will not be necessary to sell out the next dry season that comes along.

When It Pays to hold.—As before stated, there is one class of dairymen who are not selling and who are able to make money through cows even with this year's hay prices. We speak of those dairymen who have, through either purchasing outright or through building up their herds, acquired stock that will not only pay out on this year's hay prices, but also make an annual profit besides the fertilizer. For such a man to dispose of his stock would be poor business policy, for in a year's time he would not only be loser on the net income, but would also lose money in selling and buying back, just as the former man with poor stock and what is worse, it would perhaps take some time to get together another herd of good producers.

Some may doubt that there are herds in the State which are making their owners money this year, considering the prices that the alfalfa would bring. In fact, we have often heard that thought expressed, but a little study of the records of either Humboldt or Stanislaus county testing associations shows that there are money-making herds. For example, in the last report of the Humboldt association, the average for all cows entered was 270 pounds of butter-fat, while Stanislaus did even better, with an average of 309 pounds of fat.

Taking the Humboldt figures of 270 pounds of fat, which averaged last year 33 cents per pound, we have an income per cow for fat of $89.10, also a calf which at $5 brings the total up to nearly $95. Most dairymen consider that the skimmed milk received from the dairy is worth enough for hog feed, to balance up the labor end of the dairy, also that the average cow will consume between six and seven tons of alfalfa hay in a year. Granting that she consumes seven tons, for which $95 is received through the cream check, we find that the hay has been sold for $13.57 per ton. With hay at present figures, the cow has the best of it from the above, but there is still another point, and that is the value of fertilization with the cows, for while with cows one is not only feeding back to the soil, but is also building it up, and with hay crops being sold the soil is yearly being torn down.

In summing up the question, one might say that both selling and holding dairy cattle with present hay prices is the right thing to do, but before selling, one should only dispose of cows he knows are poor producers, and also that he who holds should know that all of his herd are good producers. Before either of these men sell, though, they should do some weighing and testing, for that is the only sure way of telling what an individual in the herd is doing.

CONCENTRATES AND CORN STALKS.

To the Editor: Is it necessary to feed milch cows any hay or concentrated feed in addition to green corn stalks?—J. A. D., San Francisco.

It is necessary to feed either concentrates or hay with the above. Green corn is an excellent thing for milch cows, but it is a very unbalanced ration and needs alfalfa or something else to balance it up. Green corn, for example, contains only about one per cent of digestible protein and 11.5 per cent of digestible carbohydrates and 0.4 per cent fat, or a nutritive ratio of about 1 to 12½. A proper ration would be about 1 to 6 or 7, or less.

What is meant by the above, for a doubt was expressed the other day as to the meaning of "a balanced ration," is this: There are two great classes of foods (and some minor classes which we won't talk about here). These are the muscle builders and the heat and energy providers. The first class are those that make flesh, that provide the material for the curd of the milk, etc. They are called nitrogenous foods and the essential material therein is protein. The second class cannot be used by the body to build flesh, but supply energy, make fat, etc. They are called carbohydrates and the two leading kinds are sugars and starches. Fats are composed of just the same materials in a different form and can be classed as carbohydrates in making up a ration. It will be clear that there should be the proper proportion in a feed between flesh formers and heat producers, or between protein and carbohydrates. Especially it is necessary to have enough protein, for unless there is, the flesh cannot be kept up to standard and with a milch cow, where large amounts of protein are needed to make the milk, protein is in great demand. It can be seen that only about half as much is present in green corn as is needed. To balance this up alfalfa can be fed better than anything else in California, for that is very rich in protein and the cheapest supply of protein that there is. If you give the cows a good supply of alfalfa hay with the green corn, you will have an ideal combination.

In passing, it might be said that although alfalfa has a great over-proportion of protein to carbohydrates, about 1 to 3.3 in fact, instead of 1 to 6, would do very well, this does not hurt, for protein can do everything that carbohydrates are supposed to do, although carbohydrates cannot do all the main work of protein and related nutrients. Therefore, although it would be better to balance up an alfalfa ration, that is, put with the alfalfa some other foods which would give a greater proportion of starches and sugars, cows can do very nicely without such extra feeds.

Would feed alfalfa with the corn under any conditions, but if you have to go slow with corn you can make up for the lack of protein in corn with bran, soya bean meal, cocoanut meal, and some other concentrates.

POINTS ON HORSE FEEDING.

To the Editor: Would you please tell me what saving may be made by chopping all oat hay when fed to horses? As barley is fed at the rate of two quarts per feed, could this be lessened, or better and cheaper feed substituted in part if fed with hay run through the cutter?

What is the best formula for feeding work horses with oat hay, alfalfa, barley (crushed), and corn as rations? As corn is fed during the winter months in place of crushed barley, how is it best fed—on the cob, or cob and kernel crushed?

Would the alfalfa cutter and grinder as advertised in the PACIFIC RURAL PRESS be the best for cutting hay, grinding corn, and cutting and grinding alfalfa, or would it be better to use an ordinary hay cutter, and feed corn from the cob and alfalfa hay from the shock? Is it beneficial to give an occasional feed of alfalfa in place of oat hay? If so, would it be best green, dry, or ground?

The above questions are based on the feeding of from 16 to 20 horses, fed in different barns by different drivers, with a consequent waste of more or less hay.—G. H., Aptos.

Answer by Prof. J. I. Thompson, University Farm, Davis.

There is no particular saving in chopping hay unless the horses are worked very hard and for very long hours, as is often the case with express horses in the cities, or unless the power for cutting is very cheap and feed high. The idea is that, except in unusual cases as above mentioned, the horses can do their own grinding cheaper than it can be done by power. Somewhat less hay is wasted when fed cut than when fed long, but if they are not fed too much long hay they will waste very little.

Never feed corn, cob and all crushed together to horses. Either feed it on the cob or else shell it and feed the shelled corn, or grind it by itself and throw the cobs away. Except for colts that are cutting teeth and for very old horses, it may just as well be fed on the cob.

Would feed one-half oat hay and one-half alfalfa hay, about 1 to 1½ pounds per day for each 100 pounds live weight of the horse. Add to this from ¾ to 1 pound of rolled barley or corn for each 100 pounds live weight. If the corn is on the cob, four-fifths of its weight is corn; that is to say, five pounds of corn on the cob has four pounds of grain.

RESEEDING ALFALFA.

To the Editor: This spring I planted alfalfa and only got about half a stand on some of the land. I want to reseed this fall and what I thought of doing was to put more seed on the ground and then disc it in. Or would you advise replanting the land? What do you think of putting manure on young alfalfa? Do you think there is any danger of burning it out?—C. C. S., Merced.

If your land is in good condition, that is, as even as it should be for alfalfa, your best plan will be to stir it up with a spring tooth harrow to make a nice seed bed and then sow your seed as if you were planting alfalfa for the first time. This will give you a good seed bed and the harrow will not hurt the alfalfa already growing. You might use the disc instead of the spring tooth harrow, but prepare the surface first and then plant rather than using the seed first and disc second. The manure in moderate application would not burn out the young alfalfa, but would rather do it good.

A typographical error was made in the issue of July 26 in an answer regarding udder infection by Dr. Creely. The vaccine spoken of should have been "autogenous," instead of as stated. However, the veterinarian that prepared the vaccine, if our subscriber had it made, would go by the intention and not by the way that a scientific word appears after going through the hands of several persons who wouldn't know it if they met it.

Hog-Dipping Practices.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The question of how to get rid of lice and vermin on hogs is one which is being given more thought as the hog industry grows on a sounder footing.

The main reason for this is that hogs, like other animals, do not grow as they should while being continually pestered with vermin. A great many methods are used to overcome this, and all of them have their good points. A good clean wallow is all that some supply their hogs with for this purpose, and by pouring crude oil on the water this practice is oftentimes very good. On T. B. Gibson's ranch at Woodland, I saw a similar arrangement that appealed to me. This wallow had been made in an irrigating ditch, which ran close to the hog-houses. A cement wall about four inches thick and three feet high had been built across the ditch, as a dam. An opening was left in the center, with a wooden gate to close or open as one sees fit. With this arrangement the water is backed up and makes a fine wallow which can be cleaned out by simply opening the gate and letting the water run through. The chief thing with the wallow is to have one which can easily be cleaned out and so situated that a fresh supply of water is available at any time. Another point to be careful of with such a wallow is to have plenty of fresh drinking water convenient; otherwise the hogs are liable to drink the oily water in the wallow.

Hog-Dipping Crate, Knob Hill Stock Farm.

The next easiest thing for the farmer to provide is burlap and crude oil. A great many schemes may be used with this burlap, some preferring to simply nail several thicknesses to a post and buildings, and then thoroughly saturate the burlap with crude oil at different times. The idea of this scheme is that a hog, knowing it has vermin, will voluntarily go to the post and rub it with his body, thereby thoroughly rubbing the oil into his hide. Another plan with the burlap and oil is to cut an opening in the fence between two fields and hang a piece of burlap over it like a curtain. With this arrangement, every time a hog goes through the fence opening the burlap soaked with oil rubs over his back. While all of these burlap schemes are helpful, most people find that the drawback to them is that the oil does not get worked into the creases near the legs, etc. It is for this reason that regular cement dipping-tanks are built; for after a hog goes through one of these, it is pretty certain that he has been thoroughly covered with disinfectant. The size of the dipping-tank all depends upon the farmer, some preferring larger ones and some smaller ones. One which was used on the Four Oaks Stock Farm, at Woodland, which proved very satisfactory, was 30 inches wide and 12 feet long, having sloping ends, and was 2½ feet deep in the center, which was deep enough for a mature hog to be completely immersed in the dip.

These dipping tanks can easily be made by digging a pit a little larger than the above dimensions and lining the bottom and sides with concrete. The longer the dip is made the better, as it does more effective work. Either crude oil or kerosene may be added to the water as a disinfectant, but it should not be too strong, otherwise it is apt to be harmful to the hogs, especially brood sows. When kerosene is used, about a half pint to a gallon of water is the right proportion. For the smaller pigs, this vat cannot be used in this manner, but they are instead sprayed all over with the same solution, any ordinary hand spray being sufficient for the purpose.

About eight days after the first dipping or spraying it should be repeated, as while the first dipping will kill the lice, it requires further work to kill the knits.

The only real disadvantage with the above plan is that sometimes brood sows or heavy boars are injured in getting in and out of the vat, and to overcome this, A. M. Henry, of Farmington, has devised a scheme, a picture of which is shown on this page, which is so self-explanatory that almost anybody can see its advantages. The contrivance is simply an old-fashioned windlass, similar to that used for drawing water from a well, only made longer. In this case it is just as well to dispense with the sloping ends and simply make the vat 6 or 8 feet long, 2½ feet deep, and about 30 inches wide, concrete lined as before.

The windlass is set directly over this vat and should have ropes attached. The hogs are run into a crate, one or more according to their size, and the ropes fastened; by hooking one of the ropes at either end of this crate, it is lowered into the vat until the hog is well covered with the dip, when the crate is raised and the next hog receives his bath.

The main advantage of this plan is that any sized hog can be dipped with this equipment and there is very little chance of injuring the animal.

Besides the above plans, there are the hog-greasers which are put on the market by several companies in the East. These are made of iron, so constructed that the hog is mechanically greased, and where used they have been found very satisfactory.

One reason for dipping or disinfecting the hog is the increase of cholera, which is becoming quite a factor in this State. Some growers claim that if one keeps his hogs and hog surroundings free from dirt and vermin there is very little chance of being bothered with cholera.

HELP AGAINST FLEAS AN MOSS.

Two problems that have been hard to solve have been the killing of fleas and the killing of moss on barn roofs. Arthur R. Schroeder, San Gregorio, has sent in the following plans for attack against each of these:

Flea Killing.—There is no use to emphasize the fact that the fleas are very difficult to get rid of unless proper and vigorous steps are taken. The advocates of lime, sulphur and sheep dip are entirely off their base and it is difficult to understand why they recommend the use of these materials unless it is that they never had fleas to war with and simply are working on theory gained by reading of the properties of sulphur, lime, etc., which they have failed to understand thoroughly. The rancher from Dixon who has asked the editor to solve his flea problem can do away with the pest in a very short time by the simple use of Napthaline Flakes. I will give him his choice. He either can make a saturated solution of the flakes in cheap grade of kerosene and sprinkle the dope generously around the places overrun with the fleas, or he can throw handfuls of the flakes, just as they come, here and there and I guarantee him that inside of a few days he will not be able to find a solitary flea with a candle. Where they go—why should he care as long as he is rid of the pest?

Killing Moss on Barn Roof.—Oil is too expensive and of hardly any use for moss. Throw handfuls of unslackened lime on the roof, being positive that all of the moss is covered. To do the job right break up all the lumps and have the lime in finely powdered state. That is all that is necessary. Then go away and forget all about it, as the moisture in the air if you live close to the ocean will do the rest. If the atmosphere in your locality is rather dry, sprinkle the lime, but with care so that you do not get it clear of the affected spots.

Some time ago the use of napthaline flakes was suggested here, but whether any one thought enough of the plan to try it or not we do not know. Now that they have this recommendation from some one that has tried it the treatment may meet a better reception.

Another Moss Killer.—The editor of the Western Honey Bee has a widely different treatment for moss, which is a new one on us, but certainly is easily tried. He states:

Nail a strip of zinc along the entire length of the saddle board. A roll of scrap zinc will also keep moss out of your water tank.

Zinz Method Endorsed.—The feasibility of the zinc method of moss prevention is endorsed in another communication, just received, which states:

"In Oregon, where the moss grows on everything, even the backs of the people, I often noticed where a roof plate or bit of flashing of galvanized iron was used on a roof there was always a strip from the metal to the eaves which had no moss. A narrow strip of zinc or galvanized iron fastened at the ridge board will keep the moss off, as the water draining from the metal carries enough of the corroded metal to kill the moss."—L. Campbell, Red Bluff.

BEGINNER IN SQUAB RAISING.

To the Editor: What would you advise one who contemplates beginning the raising of squabs? Is there a ready market in San Francisco, and how should I go about to find such a market?

In view of the fact that I know absolutely nothing about the industry I would appreciate your giving me as much information on the subject as space in your valuable paper will permit. Also advise me if I could get a book on the subject.—Subscriber, San Leandro.

We would advise any one who contemplated raising squabs for the market to go into the business gradually, for unless a person is experienced in handling pigeons he will find plenty of ways to make mistakes and if he has just a few pigeons the mistakes will do no special harm and he can learn the business and build up his stock at the same time. You are just in the finest part of California to learn in, as Hayward, a couple of miles distant, is the pigeon center of central California and there are lots of plants you can investigate and successful squab raisers to give you advice.

The market for squabs is rather bad just now, but in general it is good. There is a fine organization of squab raisers which attends to the marketing of squabs and handles a large proportion of those raised. The headquarters of this organization is at Hayward and you can get detailed information on market conditions there also. We hope sooner or later to discuss this matter in more or less detail, as the business is very interesting and bound to grow.

There is a book, "Squabs for Profit," sold by the Orange, Judd Company, New York, price 50 cents, which can be obtained direct from the publishers or through the Pacific Rural Press.

VETCH FOR HAY.

To the Editor: When and how should vetch be planted for hay? How many times can it be cut, and when and what is its value as a stock food?—J. E. E., San Jose.

Vetch should be planted as early in the fall as is possible and yet have rains sufficient to keep it growing. Usually this should be before the middle of November if it is to be at all. Vetch cannot well be planted alone for use as hay, as it is too hard to cut and the rule is to plant oats or barley with it for the vetch to climb off the ground, thus making it easier to cut. Of the two, oats are the better as they and the vetch usually are fit to cut at the same time, so if you know when to cut oats, you can approximate the time to cut both. There is but one crop a year. The value as hay is excellent, as the vetch is rich in proteins, like alfalfa, and balances up any lack in the oats.

Advantages of a Breeding Center.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

At the present time there is a great deal being said about established centers for purebred stock breeders, and it would seem that there are many advantages to be gained from such a plan. As they have been found beneficial in many districts of the East, they should be doubly helpful here in California, where breeders are sometimes badly scattered over a large territory. An instance of this was very forcibly brought to our attention not long ago in the case of a Jersey breeder. This man has been breeding Jerseys for a number of years, and had at the time of our visit eight or nine head of bulls, varying from 8 to 18 months in age, all of which were type individuals and, as we later found out, had good breeding back of them.

It was truly a surprise to us that so many fine-looking bulls could be found where a comparatively small herd was kept, and the prices asked were very reasonable. It seems that this breeder had in the past done some advertising through farm papers, but had only done it spasmodically. The ranch was so situated that to go to the State Fair meant an extremely hard trip for the stock, so he had never shown. Although both of these points were undoubtedly reasons for his oversupply of bulls, he stated that he realized that his location was not suited to his business and cited the fact that, while he received a great many inquiries, he found it hard to sell his stock, as he could not get people to go out to his ranch to look at them.

A direct contrast to this man's experience may be seen in one of our large dairy centers, where there are some nine or ten Jersey breeders. Here one finds an entirely different condition; for, instead of being overstocked with young bulls, many of these ranches are entirely sold out almost any time you visit them. There are good reasons for this, from a buyer's standpoint, if one will stop to consider the cause. Primarily, anyone who expects to spend $100 or more for a bull prefers to see what he is purchasing, and also likes to have as much of a selection as possible. As time and railroad fares are both taken into consideration by most buyers, it naturally follows that they go where they can get the best selection for the least expense, which is usually in a district like the latter. Another reason why the buyer is apt to visit the last-named locality is that where nine or ten breeders are so located, their combined advertising makes a much larger showing for one district, and when the intending purchaser sees one section continually advertised, it demands more of his attention.

Granting that the selling advantages are superior in the latter-named district, there are also other advantages for the breeder to locate in such a community, as may be seen from many instances in some of the Eastern States where such breeding centers have been started. One of the other advantages is that the sire question becomes more simplified, for instead of every breeder having to have a large sum invested in a sire, several can form a company and buy one high-class bull. One good reason for doing this is that, say, five breeders, each contributing $200, would be enabled to have the use of a much better sire than perhaps any of them could afford to own individually. Some may think that they would not care to be breeding to the same blood as every other breeder in his district, but if properly carried on, there are advantages to this feature also, for where some popular strain, such as the De Kol in the Holstein breed or the Golden Lad in the Jersey breed, is chosen, buyers will go to that district knowing they can get what they want.

We recently saw an instance where a very similar program was carried out with hogs, and we were told that it oftentimes proved very profitable, as when one breeder happens to be sold out of stock he can often handle some of his neighbor's, which is an accommodation for both parties and also profitable.

So far in this State no organized effort along this line has been made, but no doubt in the future different districts will grow into it, and when that time comes it will greatly benefit the purebred sire business.

Hard milking cows are a great trouble to the milker. One way to overcome this trouble, according to Hoard's Dairyman, is to roll the ends of the teats between the hands briskly. It relaxes the muscles and makes them much easier to milk.

"Success will come to anyone who perseveres."

"I don't know about that. I've been married for ten years now, and my husband hasn't liked anything I've had for dinner yet."—Louisville Courier-Journal.

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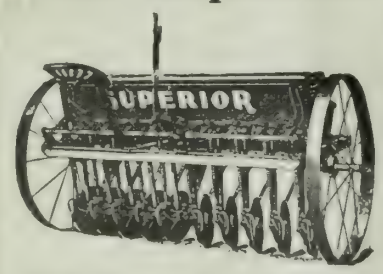

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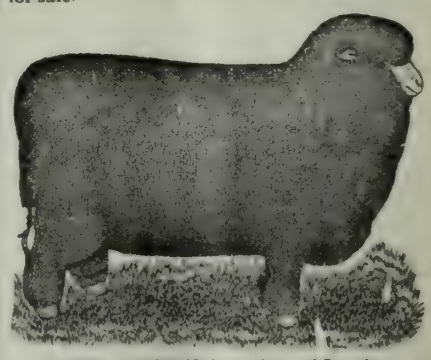

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COST OF HOG RAISING.

To the Editor: Would you please advise, through your paper, whether or not hog raising can be conducted profitably on alfalfa pasture with milo maize as a finishing ration, in a district where good land may be rented for $12 per acre? In a recent issue you wrote of a man at Woodland who was making a success of hogs. Was this done without feeding skim-milk? READER.

Chico, Cal.

It is pretty hard to say what this or that person will be able to accomplish on certain lands, but we should judge that well-bred hogs, fed on alfalfa pasture and milo maize, should be profitable on land which rents for $12 per acre.

On alfalfa which ordinarily cuts three crops, and by feeding a nominal grain ration, you should be able to keep from six to eight hogs to the acre and still not consume more than half the hay crop. The more grain you feed the less hay will be consumed, and the number to the acre also varies as to size.

We presume you refer to the article, "Professional Man As a Breeder," in the issue of July 26th, and if so you will find by reading it over that Mr. Armstrong not only feeds skim-milk, but is also a strong advocate of its use.

While hog-growing is successfully carried on in many localities without skim-milk, almost every authority in the State advises feeding it where possible, as it is one of the cheapest foods for growing pigs, and when used in connection with grain and alfalfa the hog-feeding problem is about solved. J. C. L.

WHY DRY ORANGE SEED?

To the Editor: Will you advise me through your columns what is the advantage of planting citrus seed for orange stock without letting the seed get dry after removing from the fruit? Some horticulturists say the seed should be dried while others, including Wickson, say keep it moist.—Inquirer, Fair Oaks.

The method to use depends upon the kind of seed that is being handled. If it it sour seed, which comes from Florida, it seems that it does it little, if any harm to let it get dry. When it comes to sweet orange seed, such as a person would get from California oranges, he would probably lose the whole lot if he let it get real dry and should follow the method advised in California Fruits closely. Sometimes lemon seeds can get dry, and other lemon seeds will lose their power of germination if this is permitted, and the same with other citrus seeds. You have to keep some seeds moist, especially those commonly produced in California, and although others will germinate after drying, it is surely safer to keep them moist, and there is a possibility that even with the seeds that may be dried the vigor of the seeds would be greater if drying were not permitted.

SUMMER PRUNING OF APRICOTS.

To the Editor: Is it feasible to prune five year old apricot trees in August. They seem in good growth and have been irrigated three times this season, though they have never been pruned very closely.—S. T., Modesto.

Summer pruning would probably be perfectly proper and advisable, as can be seen from the following from California Fruits: "There has been a very marked change during the last few years of the pruning of the apricot. Summer pruning immediately after the fruit is picked, has become much more general, and winter pruning has proportionately decreased. The new practice is certainly more rational than the old. Young trees are winter pruned to promote low branching and short, stout limbs; bearing trees are summer pruned to promote fruit bearing and check wood growth—the excess of bearing shoots being removed by thinning during the winter." Your trees are evidently far enough past the formative period to make them fall into the summer pruned class.

HOGS BEST FERN KILLER.

In regard to an inquiry as to the best way to kill ferns in a young orchard, we have received the following information:

To the Editor: Tell O. P. F. to turn a lot of hogs in among the fern. They will root them out, as they are very fond of fern roots. The northern Indians used to eat them in winter when their stock of provisions ran low. The young fern shoots, cut like asparagus just as they appear above the ground, are used by many people as a substitute for asparagus in early spring where the winters are as long as they are in the north.—Sam'l Haigh, San Jose.

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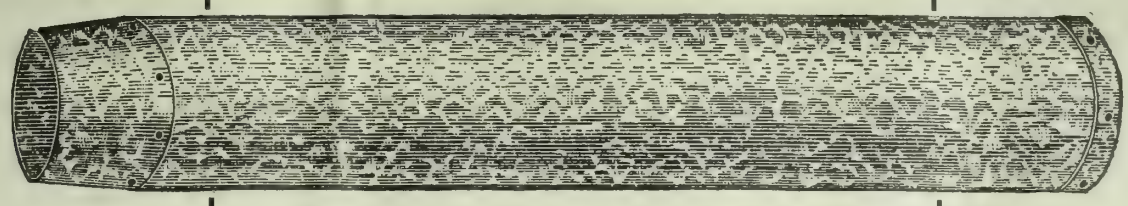

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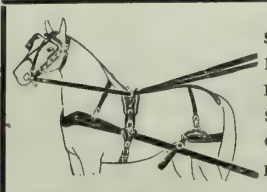

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140 Head Yearling Rams
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H. P. EAKLE, Jr. Woodland, Cal.

With the Livestock Men.

E. A. Clausen, of the firm of Clausen & Peterson, reports that their Holstein cattle, imported from New-York last year, are doing exceptionally well. This stock was principally purchased from Stevens Brothers of New York and have since their arrival here dropped six calves, four of them heifers and two bulls. This young stock was all sired by Pontiac Artist, and as their mothers are producing well, some fine results are expected from them in the future. Mr. Clausen also states that his Berkshire hogs are rounding into fine condition, being run on the low river lands at this time. His announcement for the sale of some young hogs appears in another column.

Dr. E. J. Weldon, proprietor of the Pennant Dairy at Sacramento, paid this office a visit last week, and stated that his Holsteins are doing nicely and that he expects to enter some of them at the State Fair this year. So far this season he has found the demand for pure-bred Holsteins very good, even in the face of such a dry year.

W. S. Brainard has leased 320 acres of his land at Corcoran to dairymen from Newman, who will run it as a dairy. The rental averages $18.75 per acre, which is a very good figure for that district.

Sonoma and Marin counties are planning big things for their district fair, at Santa Rosa, September 1 to 6. Among the purebred stockmen who have promised to exhibit are N. H. Locke Co. of Lockeford, S. Wright of Santa Rosa, E. C. Rand of Santa Rosa, Jack London of Glenn Ellen, and Frank Mechum of Petaluma.

T. B. Moore of Baker City, Oregon, recently sold 28 head of work horses and mules at Pendleton, Oregon, which averaged $125 per head.

Arthur Smith, receiver for the Harry Fraser Company at Chico, has turned 700 head of sheep into the Nord and Rover ranches, to keep down vine-suckers and weeds, which are said to be abundant in that section.

J. K. Frazer, the Duroc Jersey hog breeder of Denair, writes that he expects to have a good representative herd of that breed at the State Fair this year, and may also show some of his Holstein cattle, he having some good individuals for his foundation herd.

W. L. Bond, of Orosi, has shipped, this season to date, 550 head of cattle for points in this State and Oregon. Reports of this kind from so many sections seem to indicate that there will be a scarcity of good stock in this State next year.

Another new cow-testing association has been formed near Jacinto, Glenn county. For the present it is expected that fully 1100 head will be entered, and that by January first there will be 1500 head. A good association in this district should prove very profitable, it being a new district where culling is usually badly needed among the dairy herds.

Ed. Johnson, the Duroc Jersey swine breeder of Turlock, reports that the demand for purebred hogs seems to be equal to his supply. It is a noticeable fact that this year when most farmers are feeling pessimistic, that purebred breeders are usually pretty well sold out at all times.

Lower prices prevailed at the Portland Union Stock Yards last week, due a great deal to lack of quality. The following condition and prices prevailed: Good steers, $8.25; cows, $6.75 and $7; calves were steady and bulls a shade lower; hogs dropped from $10 to $9.70 for best light swine; sheep were slow and draggy, ewes $3.50, top wethers $3.75 to $4, and mountain lambs $5.50 to $5.75.

Dieckmann & Co. of San Francisco state that they are finding a good demand for purebred dairy stock in different districts of South America. So far, most of their calls have been for Holsteins and Short-horns.

H. A. Hunter of Lindsay has completed the installing of a cold-storage and ice plant at his dairy near town. This will be run as a sanitary dairy, the product to be delivered in Lindsay.

Reports indicate that the dairy industry around Inwood, Shasta county, is rapidly becoming one of the leading industries of that section. Much stock has been brought in this year for dairy purposes, and it is said that many silos are to be built next year, the ensilage to be fed in connection with alfalfa, clover and wild grass pastures.

In another column of this issue will be found a list of the fairs and shows to be held on this coast the coming fall and winter. At the present time it looks as if stockmen will take advantage of these fairs as they never have before, and every fair manager is expecting a good live stock exhibit.

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A classification has been made for market culinary animals, providing premiums for rabbits and hares.
There has also been established boys' judging classes, and the sum of $400.00 set aside for premiums for boys who prove the best judges of live stock.
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Fair and Show Dates.

Aug. 18-23.—Gravenstein Apple Show, Sebastopol, Sonoma county, J. P. Kelley, Secty.

Aug. 18-25.—Yolo County Fair, Woodland, H. S. Maddox, Secty.

Aug. 29-31.—Bartlett Pear Show, Placerville.

Sept. 1-6.—Sonoma County District Fair, Santa Rosa.

Sept. 5-7.—Agricultural and Stock Show, Live Oak, J. A. Rice, Chairman.

Sept.—Hop Festival, Ukiah.

Sept. 2-6.—Merced County Fair, Merced.

Sept. 9.—Grape Festival, Escondido.

Sept. 13-20.—California State Fair, Sacramento. J. L. McCarthy, Secty.

Sept. 15-21.—Spokane Inter-State Fair, Spokane, Wash. Robt. H. Cosgrove, Secty.

Sept. 22-27.—Nevada State Fair, Reno, Nevada. W. D. Phillips, Secty.

Sept. 29-Oct. 4—Oregon State Fair, Salem, Oregon. Frank Meredith, Secty.

Sept. 29-Oct. 4.—Washington State Fair, North Yakima, Wash. H. B. Averill, Secty.

Sept. 30-Oct. 4.—Fresno County Fair, Fresno. R. W. Wiley, Secty.

Oct. 16-17-18.—California Nurserymen's Association, Fresno.

Oct. 6-11.—Kings County Fair, Hanford.

Oct. 6-11.—Festival of the Apples, Watsonville. Harry Perkins, Manager.

Oct. 6-13.—Riverside County Fair, Riverside.

Oct. 11-25.—California Land Show, San Francisco. Edward H. Brown, General Manager.

Nov. 12-15.—Glenn County Poultry Breeders' Association, Willows. O. F. Schuchard, Secty.

No. 24-29.—Long Beach Poultry Association. C. C. Crippen, Secty. 113 West St., Long Beach.

Dec. 4-6.—San Mateo County Poultry Show, San Mateo. Arthur R. Schroder, Secty.

Nov. 25-30.—Alameda County Poultry Show, Oakland. C. G. Hinds, Secty. 535 42 St., Oakland.

Nov. 15-18.—Santa Cruz County Poultry Association. E. J. Harran, Secty.

Nov. 19-22. San Joaquin Poultry Association. W. MacKay, Secty. Stockton.

Dec. 3-6.—Fresno Poultry, Pigeon and Pet Stock Association. Russell Uhler, Secty.

Dec. 4-6.—Stanislaus Poultry Association. E. C. Nicols, Secty, Modesto.

Dec. 1-8.—Oregon Poultry and Pet Stock Show, Portland, Oregon. W. L. Fulmer, Secty.

Dec. 10-13.—Petaluma Fanciers Association. T. McGuire, Secty.

Dec. 8-13.—Pacific International Livestock Exposition, North Portland, Oregon. O. M. Plummer, General Manager.

Dec. 31-Jan. 4.—San Francisco Poultry Show, San Francisco.

Dec. 30-Jan. 4. Walla Walla Poultry Association, Walla Walla, Washington.

NEW PLAN FOR COW TESTING ASSOCIATION.

The chief reason why there are not more cow testing associations in this State at present is mainly due to the fact that dairymen as a whole are just beginning to see the advisability of testing. Another cause for less testing is that oftentimes people who want to do testing are not near a large dairy section where the usual system would be better. The conditions here are no different in these respects than have been found in the east as is shown by a new form of associations being started in Indiana which should work out in parts of California.

In this place there are 8 units, each containing from 100 to 150 cows. These units may or may not be close to each other as for instance one community may be able to furnish enough stock for 1 or 2 units, while another 40 or 50 miles away could only furnish sufficient for 1 unit. The tester visits each unit once every two months for one week. The cost of testing is 75 cents per cow per year, and it is stated that from 800 to 1000 cows can be handled by each association.

Perhaps no phase of dairying is being shown more interest than testing and in another five years the man who doesn't test will be the exception rather than the rule as at present.

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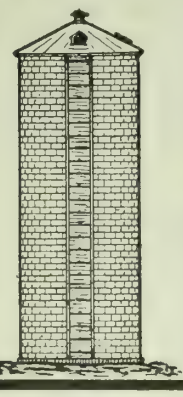

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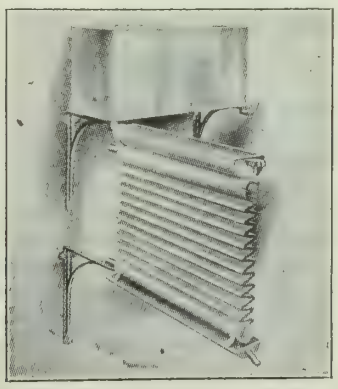

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Spraying for Thrips.

To the Editor: Thrips are doing my trees some damage. Would you advise me to spray? I have ten acres of oranges and some grape fruit. Is it safe to spray in hot weather? My trees are three years old.—A Subscriber, Woodlake.

Spraying would be very advisable, as it would stop nearly all of the injury that would otherwise be done. It will not repair such injury as has been completed already, as several sprayings are needed through the season to keep the orange thrips under complete control if they are present in numbers. Two sprays can be used, tobacco extract (40% nicotine) diluted 1 part to 1800 parts of water, and lime-sulphur diluted at the rate of 1 part to 80 parts of water. The latter is possibly the better, though more inclined to burn the foliage. You might get even better success with some of the commercial sprays. In case one begins in time, four applications are recommended, always providing that the thrips are bad: the first just after most of the petals have fallen, the second in 10 to 15 days after the first, the third from three to four weeks after the second, and the fourth during the months of August or September, when the thrips are numerous on the foliage. In spraying for this insect it is advisable to use angle nozzles and from 175 to 200 pounds pressure, care being taken that every portion of the tree is thoroughly drenched.

Spraying is advisable no matter how hot it may be, but it is well to spray at a time when the leaves will be dry before the sun is the worst. Start as early in the morning and quit about nine or before; again in the afternoon about four and keep it up as long as you can and still make a good job. The hotter the weather the more particular you have to be about the time of spraying. Spraying certainly is advisable, as it will protect trees and fruit this year and make less damage next year also.

FUMIGATING FOR BLACK SCALE.

To the Editor: Being of limited experience, I would like to know the best method of eradicating the black scale from my orange trees, whether by spraying or fumigation, and what time should I begin?—Subscriber, Pasadena.

Spraying has been given up as a suitable method for controlling the black scale on citrus trees, and the only recognized method of merit where the scale is bad is by fumigation. This is done in the fall. Would advise you to communicate with the County Horticultural Commissioner, Los Angeles, who, through inspectors, will see that you have a good job done, at the right time and at as moderate price as is compatible with good work. It is impossible to 'eradicate' the black scale, but there is a great difference in the amount that can be killed, and it pays to have a job done as near perfectly as possible.

THE PRESERVATION OF MANURE.

Each year sees the extension of the sugar beet industry and the increasing value of manure. Stock feeding for the manure produced is bound to come. What, then, is the best way to keep the manure produced on the farm? If the sheep or cattle are kept in corrals while fattening, then the best way is to leave the manure alone until it has rotted about six months and then spread upon the land. In this way little fertility is lost and the bacterial action is slow enough to avoid burning the manure.

If the corral ought to be cleaned preparatory to another year's feeding, pile in the shade and try to do the job during wet weather so that the manure will not burn. As much as half the fertility can easily be lost when the manure pile heats. Horse manure is particularly bad about heating, and wetting it down or mixing with cattle manure will help greatly in its preservation. In our dry climate fresh sheep manure should never be spread upon the land. It dries the soil, burns the crop, and is a very long time rotting. On the other hand, six months, or at the most, a year is time enough to thoroughly rot sheep manure and put it in fine shape for plant assimilation.

Colorado Agricultural Experiment.

This Country Home Has Splendid Water Supply Service

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Mr. Fiero says: "The Kewanee System does all you claim for it and out here in the country, we are enjoying the comforts of city life. You have my permission to use my letter. It will please me to help someone else get a "good thing."

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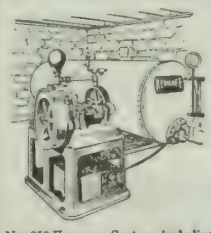
Kewanee Pumping Machinery, including hand and power pumping outfits, is built for air pressure service—as far ahead of ordinary pumping rigs as the Kewanee Tank is ahead of leaky attic tanks.



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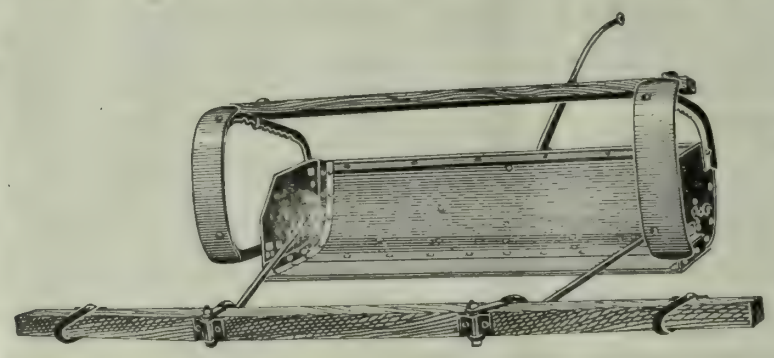

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This scraper is made entirely of high-grade steel. In the quality of materials used, workmanship and finish is superior to any other scraper made.

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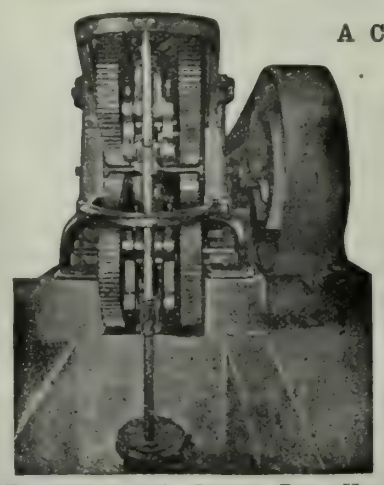

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Leghorns and a Weight Standard.

[Written for the PACIFIC RURAL PRESS by MRS. SUSAN SWAYSGOOD.]

Just at present there is a little commotion among Leghorn breeders about the right size and weight a hen should be to still be a Leghorn and be a good layer. Formerly it was considered that the smaller Leghorn was the best layer; but breeders have cut down size until a great many reached a 2½ pound hen, and now the limit has about been reached. The fact is that in so small a hen there is not the capacity to either lay a large egg, or a number of them.

Leghorns as a breed, have never had a weight clause in the standard of perfection, so if a bird was of good color and type it was eligible to win a blue ribbon, and this is one way that size came to be so badly ignored. Now with the record of the English pen of White Leghorns at the Missouri egg laying contest and the size of the hens that have made the record being taken into view there is quite a little fuss going on about size.

The pen of English White Leghorns at Missouri that are leading all others in the egg laying contest are much larger in body than our standard White Leghorns, hence the inquiry and investigation about size and weight. When an even number of hens can lead all competitors by 230 eggs in a little over six months it is time to make inquiries, and while the size may not have anything to do with the matter of egg laying, it looks most reasonable to think that a hen having a fair size and weight for the breed she belongs to will have a greater capacity for either laying or table purposes according to which type she belongs to.

A good many breeders seem to think a compromise between the larger English variety and the best American strains should be bred for and adopted as the standard weight.

New York and California appear to be the big centers for the White Leghorns, probably because both markets demand a white egg of fair size, and while others breeds may lay white eggs they have not met the popular demand for some reason. Personally I think the reason is that the Leghorn being small and very numerous can be bought so cheap, then again they are fairly hardy, good rustlers and foragers. So for the man with a range the Leghorn fills the bill when eggs only are the object.

Some of the large eastern breeders think that not having a standard weight has done the breed great harm inasmuch as no matter how small a bird is it can win in the show room, thus earning a right to be called "standard bred." All that is necessary is to have type, color and head and leg points. Everybody wants eggs of good size, but unless the body is there the eggs will be so small the first year that they bring out a small price. The second year of Leghorns the eggs are always much larger, and I think a two year old lays a fair number of eggs, but they should not be kept longer for profit.

As in all other questions, though, there are Leghorn breeders that are afraid that if a standard weight is made and the size increased, the egg laying qualities will be injured, in other words they say a larger Leghorn will not be a good egg producer, but will run to meat. That in my opinion is foolish, because in all breeds there are the two types found, the laying type and the beefy type, one has a short broad head and the other a long thin fine head.

One looks strictly feminine, and the other more masculine; the same thing is found in all kinds of live stock. The cow with a fine head and a feminine look is generally a good milker, while the cow with a coarse broad head will be a good beef cow.

But the breeders of Leghorns are up against a snag; for while they realize the need of increasing the size for utility purposes, in the show room the graceful natty small bird gets the preference over the larger and heavier built bird. This is the real gist of the desire to have a weight clause.

With a weight clause attached to a breed, personal preference of a judge must be set in the back ground if a bird comes up to the standard requirements. And why the Leghorns have been called standard-bred birds all these years without having a standard is a puzzle.

Might just as well put a small half bred Clyde horse in the ring to compete with the heavy "real Clyde," because if he happens to have color, shape and head points he is just as eligible as a blue ribbon winner as the real article, that weighs three or four hundred pounds more.

One of our subscribers writes "the tonic recommended has done my flock good, in fact has been sucessful in curing them of their sickness." This was the tonic recommended as a good general tonic a few weeks ago, and some molting hens need a little tonic to help them through.

AN EYE OPENER.—On June the 9th, producers were receiving for their staple crops, 28 per cent less than at the same time last year, 5 per cent less than at same date in 1911, and 9 per cent less than in 1910. Prices paid for meat animals on May 15, according to the Department of Agriculture, averaged about 10 per cent higher than at the same time last year, 27 per cent higher than two years ago, and four per cent higher than in 1910.

Yet the poultryman is paying exactly the same for grain and getting less for his poultry and eggs. How is it? Taken as it really is, that is as the markets are, the farmer is getting less for his grains and more for his meat, it should mean a good deal to us poultry raisers, because it should mean lower feed and higher prices for our finished product. I don't know, what I do know is that wheat still marks up $2 a hundred pounds in Pomona.

NEW PRESERVAITVE FOR EGGS.

A new agent for the preservation of eggs has been found and placed upon the market by a Zurich concern, and from all accounts has met with very good results. The preservative is called Ovo Conservator, and consists of a prepared liquid substance of adhesive character, the ingredients of which may be easily and cheaply obtained in any country. The process of preservation is very simple: A flat vessel of about 100 quarts is filled to half its capacity with the preserving agent, into which the eggs are dipped for two minutes and then allowed to dry. For the dipping process the eggs are placed in flat wire baskets, each with a capacity of 300 to 500 eggs. One basket is dipped after the other, and by employing a larger vessel several baskets may be dipped simultaneously. In this manner two or three persons can dip 200,000 eggs per day.

The inventors claim that the treatment is superior to the cold-storage and pickling methods of preservation. Cold-storage eggs become decomposed a few days after being removed from the refrigerating rooms, and the pickling method seriously affects the taste of the egg, while considerable expense is involved in the application of both of these methods, whereas economy is one of the chief advantages possessed by the new treatment. They state that eggs are always overhauled before shipment and that very little time is lost in dipping them in the solution during the operation, as they dry very quickly and are almost immediately ready for repacking. No special machinery is required and the new agent is guaranteed to preserve the eggs for nine months, causing them to retain their freshness, weight, transparency, appearance, smell and taste.

GOVERNMENT TESTS.—The claims of the inventors of Ovo Conservator have been investigated by the authorities of the Federal Polytechnical School at Zurich. Eighteen eggs were submitted to them in December, 1911, 12 of which had been treated with the solution and 6 in their natural state. They were carefully weighed, placed in a sealed box, and after 6, 9, and 12 months were examined and tested. The loss in weight during these intervals is shown, as follows:

	6 mo. %	9 mo. %	12 mo. %
Preserved eggs	2.81	4.24	5.20
Non-preserved eggs ...	8.20	12.95	17.025

In every case the non-preserved eggs lost at least three times more in weight than the preserved eggs. As to density, after nine months all the preserved eggs stood the test in a solution of common salt of 1.015 density, and after one year also, with the exception of one egg. All the non-preserved eggs failed to stand this test after six months. After an interval of nine months the non-preserved eggs lost their transparency, whereas the preserved ones were still clearly transparent. Of four preserved eggs, there remained after one year two of good transparency, one fair, and one nearly opaque. The preserved eggs also stood the tests, after one year, of appearance, smell, and taste, whereas the non-preserved specimens were useless.

The résumé of the authorities' investigation was that the new preserving agent keeps the eggs fresh for nine months, after which time they may be used for every purpose. They state the decomposing infection takes place either before the egg is laid or afterwards by germs which penetrate the eggshell, and the new treatment prevents the second infection, or at least greatly diminishes it.

HOPLAND S. C. White Leghorn COCKERELS.

You cannot expect to increase your egg production unless you have the blood lines that it takes to produce eggs. Our birds have been bred for this heavy egg production, and you can increase yours by using our COCKERELS.

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The Home Circle.

A Ridiculous Muddle.

Miss Lucy Meadows had two admirers, each of whom endeavored to court her while the other tried to do the same thing. The experience is not uncommon, but it it always exciting.

It is scarcely necessary to say that Lucy was like most other girls and enjoyed the excitement. At heart she was an honest maiden, but she was addicted to harmless flirtation. She gave each suitor a little enocuragement, but not too much, and excused her conduct on the ground that she did not yet know which she liked the better.

In fairness to our heroine it must be confessed that her excuse was not a bad one, for her admirers happened to be as nearly equally desirable as they could be. Each was fairly good-looking, each could make himself quite agreeable, each had the average intelligence, each had a good business and attended to it in a creditable manner, and neither had any glaringly bad habits. By anxious mothers and prudent fathers they were both considered good catches for daughters.

To the young men the double courtship was not so pleasant as it was to Lucy. They were often on the tenters and regarded each other with jealous eyes whenever they met. But fate had decreed that their charmer also should have her feelings not slightly disturbed after she had for some time contributed to their torment without any compunctions of conscience.

Her punishment was meted out to her one winter evening. She had been to the theatre with Jacob Walters, the suitor who at that time was to a small extent more in favor than his rival. The couple were strolling along, watching for a car on which they could ride to Lucy's home. While they were chatting to their mutual satisfaction, they became involved in a jostling crowd that was pouring out in another theatre. The girl became separated from Mr. Walters, and hurrying forward in search of him in the indistinct light, found him, as she supposed, and linked her arm in his with that confiding and affectionate touch which men like to receive from those whom they adore. She walked contentedly in silence for about a minute, when for the first time she raised her eyes to the face of her escort. She gave a little scream and quickly drew her arm from that of her companion. He was not Jacob Walters, but John Hutchinson, the other admirer.

"O, excuse me; I did not mean to. I—"

"No excuse is needed. I am delighted, I assure you," replied Hutchinson, who had concluded from the charming manner in which she had attached herself to him that she intended at last to show a marked preference for him.

"O, what shall I do! How shall I explain my conduct?" she continued, not heeding his words.

"No explanation is necessary. Tell me," and he bent over to her eagerly, "were you not about to reward my devotion when you were frightened by your own boldness? O, tell me there is hope!"

He attempted to place her arm in his and to walk as they had done when they met.

"You must not; you do not understand," she cried, as with a desperate effort she extricated herself from his grasp.

"What does all this mean?" was the inquiry in excited tones.

Jocob Walters was again at her side after an anxious search.

The rivals glared at each other.

"It is none of your business," shouted Hutchinson, who proposed to show his sweetheart how doughty a champion he could be.

"You must not quarrel," exclaimed the girl as she ran between the two angry men. Overwhelmed with distress and confused in her mind, she extended her hands towards Walters.

"Forgive me," she cried; "it is all a dreadful mistake."

"Do you suppose I am a fool? You deserted me to go to my rival when you were bound by every rule of politeness to allow me to escort you home. Your conduct is amazing."

"Your language is amazing, also. I desire you to understand that I shall protect this young lady from insult," Hutchinson with dignity.

Lucy turned toward him and said, "I beg of you to keep still. You do not know what you are talking about."

"Please enlighten me, then."

"Mr. Walters was escorting me home from the theater. We became separated in the crowd just before I met you. I searched for him, and when I took your arm I thought you were he. You were the last person whom I desired to see under the circumstances."

"Thank you; I shall endeavor to avoid meeting you hereafter."

Lucy saw her mistake, but knew not how rectify it. Her intentions were good, but in her confused attempt to make a satisfactory explanation she had been guilty of a woeful lack of tact. Naturally at this disagreeable moment she turned to her other lover for sympathy.

"You at least must understand the situation and must know that I am not to blame," she cried in appealing tones.

"I am not satisfied," he replied gloomily.

Out of patience she exclaimed: "You are both so stupid! I shall ask no favors of either of you."

She stepped into the street, and before they could recover from their surprise a passing car was carrying her from them.

"What do you think?" asked Hutchinson.

"I think she is a consummate flirt."

"So do I."

"She has tried to hoodwink both of us. Whatever have been our differences in the past, we have a common cause now. It is incumbent on both of us to assert our dignity, and to show no attention in the future except what the most formal politeness requires."

"I agree with you; and I further propose that each of us shall solemnly promise the other never again to seek her hand in marriage."

"Your proposal suits me exactly."

They shook hands earnestly and vowed again and again to be faithful to their pledge. They were as friendly now as they had been hostile a short time before.

Manwhile, Miss Meadows also cherished anger. She resolved never to forgive either of her admirers. But at the end of a week her mood was somewhat conciliatory. She reflected that the young men must by that time realize that they had made fools of themselves and that she had done nothing of which she need be ashamed. She expected that they would soon seek her presence in a sheepish manner, and she was prepared to show a gracious demeanor and to let bygones be by-

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gones. But weeks went by and they did not call. She met them several times and they hurried by her and returned her greetings with cold formal bows only. It was now her turn to be very unhappy, especially as it was revealed to her that she did greatly care for one of her former admirers, viz., Mr. Hutchinson. She knew now how to decide between the two, but alas! the opportunity to make such a decision might never return.

Mr. Hutchinson also became uneasy. He was astonished to find how deep his love for Lucy was and how futile were his efforts to overcome it. He bitterly regretted his pledge; but as he himself had been the first to propose the compact, he could blame no one but himself for making it, and was under the strongest kind of an obligation to keep it.

The painful situation was soon further complicated by an act of Miss Meadows. She began to encourage a middle-aged widower named Slawson, who had long desired to show her marked attentions, but who had been prevented from doing so by her cold demeanor toward him while his two younger rivals were in favor. He was now filled with inexpressible delight because of the winning smiles which the charming maiden for the first time bestowed upon him, and he was so elated because of his unexpected success that he did not stop to inquire why she treated him with a cordiality she had never before manifested. But unlike the infatuated Mr. Slawson, Lucy was dominated by sentiment alone. She was as wise as a serpent, while seeming to be as harmless as a dove. She hoped that her gracious treatment of the widower would render Mr. Hutchinson jealous and cause him again to seek her society for the purpose of preventing, if possible, a third admirer from winning her affections.

The maneuvre was skillful, but it only brought about a part of what she desired, and even of that part she was ignorant. Mr. Hutchinson was made desperately jealous, but the agreement with Walters, which, of course, was unknown to Lucy, prevented him from endeavoring to become reconciled to her.

Two months elapsed. Seemingly Hutchinson was determined to maintain his indifferent demeanor. Miss Meadows was discouraged. She believed that the young man did not reciprocate her love for him and she began to think that the best thing she could do would be to marry Mr. Slawson. To be sure, he was a widower 20 years older than herself, and had two daughters, each of whom was not much younger than she was, but he was also wealthy and lived in a fine house. Moreover, she rather liked him and he adored her. She might do worse than to accept him as a husband.

At this critical time Hutchinson, unable longer to simulate indifference, resolved to tell Walters how he felt, although he feared that his former rival might still love the girl as much as he himself did. When the two young men next met, Hutchinson, growing red in the face, broached the subject that was uppermost in his mind.

"I want to ask you," he said in a blunt and desperate way, "whether you are willing to release me from keeping my compact by which each of us agreed not again to seek to marry Miss Meadows? I confess that I now love her more than I ever did. I suppose you may love her, too. I would like to be free to court the girl again, and, of course, if I had that privilege, you, too, would again have a right to show her attentions, provided you desired so to do. Let the better man win, I say, and if either of us is to win we must be lively, I tell you, for the widower is making alarming progress in the improvement of his opportunities, unless I am much deceived."

Walters laughed as the other spoke and looked at him in a peculiar way.

"I release you from your promise. Go ahead, and may you have good luck."

Hutchinson was much surprised.

"Can it be that you are no longer interested in Miss Meadows?" he asked doubtfully.

"I am no longer interested."

"May I ask the reason?"

"Yes; confidentially, I will tell you that I am now in love with another girl."

"I am so glad. I hope she will reciprocate your affection and that you will be very happy," said Hutchinson, as he fervently shook the hand of his companion.

"She has already accepted me."

"Good."

At 2 o'clock in the afternoon of that day Mr. Hutchinson stood beside Miss Meadows in the parlor at her home.

"Am I too late?" he asked.

"No; but you would have been one hour from now."

"What do you mean?"

"At 3 o'clock Mr. Slawson will receive his answer."

"What will you say?"

"Had you not called, my answer would be yes."

"What will it be now that I have called?"

"No."—J. A. Bolles in Amercian Cultivator.

Household Hints.

Renovating leather on furniture.—To make shabby dark leather look new once more rub it over with either linseed oil or the well-beaten white of an egg mixed with a little black ink. It should be polished afterwards with soft dusters until it is quite dry and glossy.

To improve the lamplight.—Soak the wick of a lamp in strong vinegar and dry it well before use. The flame will then burn brighter and clearer.

To whiten discolored clothes.—To whiten clothes which have turned a bad color try the following plan: Prepare a solution of pipeclay and warm water, and soak the clothes overnight in this. Then wash and boil them next day in the usual way, and they will come out looking as fresh and white as when new.

To keep a rug flat.—When the edge of a rug persists in curling up, lay over it on the wrong side a damp cloth, and on this place a moderately hot iron. Let it stand for a few minutes, and the steam will make the rug lie perfectly flat. It is not a bad thing to use an old corset steel, dress-stay, or piece of stiff wire, herringbone stitched diagonally at the corners on the wrong side of a much-used rug. This will prevent it from curling up and being not only unsightly, but dangerous.

Absolutely New.

"I heard a funny story the other day about a Chinese. He was looking at a laundry sign that said:

"'Socks, 2 cents.
'Shirts, 8 cents.'

"'Allee samee evly day,' he said. 'Sox got beat again!'"

"Old chap, that isn't a new story; I heard it a month ago—only it was an Irishman that said it."

"Then it wasn't a Chinese? Well, it isn't the same story at all."—Chicago Tribune.

"A successful man earns more than his wife can spend."

"My husband does that."

"Why, your husband doesn't earn much, Mrs. Titewaddo."

"I know it, but he hangs on to all of it."—Houston Post.

Reversed Himself.

"What's the trouble now?" demanded his employer when the office boy came in half an hour late.

"The ice on the pavements," said the lad. "Every step I took I slipt back two."

"You did, eh? Then how did you ever get here?"

"I started back home."—Judge.

Orders.

Miss Hogabust (of Chicago)—And what profession is your son in, Lord Hightop?

Lord Hightop—Oh, when Algy leaves college I expect he will take orders.

Miss Hogabust (surprised)—You don't say! Well, papa has got some real nice gentlemen traveling for him.

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THE MARKETS.

San Francisco, August 6, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

With reports of heavy production in the Northwest, and a continued downward tendency in other markets, local prices have again been marked down a little. There is not much wheat here, however, and values seem fairly steady as now quoted.

California Club, ctl	$1.50	@1.52½
Forty-fold	1.52½	@1.55
Northern Club	1.50	@1.92½
Northern Bluestem	1.65	@1.67½
Northern Red	1.50	@1.65

BARLEY.

The movement of new barley is gradually increasing, and there has been a little business in brewing and shipping grain within the range quoted. Feed is again lower, and still rather easy, but buyers are taking a little more interest than for some time past.

Brewing and Shipping	$1.35	@1.37½
Choice Feed, per ctl	1.25	@1.30
Common Feed	Nominal	

OATS.

There is nothing new in oats, prices standing as before, with little business except in a small jobbing way.

Red Feed	$1.65	@1.85
Seed	Nominal	
Gray	Nominal	
White	1.55	@1.60

CORN.

Continued reports of a crop shortage in the Middle West have caused sharp advances in Eastern markets, and this condition is reflected locally in prices for both Eastern and California corn. The kaffir and Egyptian varieties are practically all in the hands of dealers, and prices will be entirely nominal until the new crop comes out.

California Yellow	$1.65	@1.70
Eastern Yellow	1.65	@1.70
Eastern White	**Nominal**	

RYE.

The small offerings in this market are still held at the old quotations, but there is very little trading in this grain.

Rye, per ctl	**$1.45**	**@1.50**

BEANS.

Nothing new has developed in the bean market lately, prices on all descriptions in this market standing the same as last week. Business is, if anything, less active than before, though there is some shipping demand all the time. The movement is too light to bring out any pronounced firmness, but stocks have been reduced to such small compass that values are pretty steadily held. Some changes, however, may occur as the new-crop outlook becomes better known.

Bayos, per ctl	**$3.15**	**@3.25**
Blackeyes	**3.15**	**@3.35**
Cranberry Beans	**4.70**	**@5.00**
Horse Beans	**1.90**	**@2.15**
Small Whites	**5.50**	**@5.70**
Large Whites	**4.50**	**@4.75**
Limas	**5.75**	**@5.90**
Pea	**Nominal**	
Pink	**2.75**	**@3.00**
Red Kidneys	**3.40**	**@3.60**
Mexican Red	**3.75**	**@3.80**

SEEDS.

No buying movement of any consequence has started in seeds, and all descriptions are quoted at the old figures.

Alfalfa	12½@	14c
Broomcorn seed, per ton	**$27.00@**	**28.00**
Brown Mustard, per lb		**3¾c**
Canary	6	@6½c
Hemp		**3 c**
Millet	2½@	2¾c
Timothy	**Nominal**	
Yellow Mustard	**Nominal**	

FLOUR.

Values are held at the old range, trading being about on the usual moderate scale for this season.

Cal. Family Extras	$5.60	@6.00
Bakers' Extras	**4.60**	**@5.20**
Superfine	**3.90**	**@4.10**
Oregon and Washington		**4.90**

Hay and Feedstuffs.

HAY.

Arrivals for the past week show a still further increase, and, with little activity on the part of local buyers, considerable difficulty is experienced in cleaning up what comes in. Prices are accordingly lower for most descriptions of hay, and all grades are still easy at present quotations. Growers in some outside districts show more inclination to sell than formerly, and many are making concessions from the old prices in order to clean up the crop. Dealers so far show no great anxiety to buy for storage, although some storing is being done now by the consuming trade. The lack of speculative demand is due largely to the scarcity of money, and partly to the high prices which have prevailed until recently. The demand for alfalfa is strong in many sections, but offerings are increasing and prices are a little easier.

No. 1 Wheat, or Wheat and Oat	**$15.50@16.50**
do No. 2	14.00@15.50
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 95c

FEEDSTUFFS.

Cracked corn is higher, in sympathy with the advance in the East. Other lines show more easiness, with declines in alfalfa meal, bran, and rolled barley and oats.

Alfalfa Meal, per ton	$19.00@20.00
Bran, per ton	26.00@27.00
Oilcake Meal	32.50@33.00
Cocoanut Cake or Meal	28.00@29.00
Cracked Corn	40.00@41.00
Middlings	**34.00@36.00**
Rolled Barley	27.00@28.00
Rolled Oats	33.00@34.00
Shorts	**27.00@28.00**

Garden Truck.

VEGETABLES.

Onions show a wider range, with liberal supplies in this market and only moderate inquiry for shipment. General garden truck is rather easy than otherwise, with abundant offerings of all seasonable lines and no unusually large demand. Green corn is somewhat lower, though fancy lots sometimes bring more than quotations. Tomatoes, though a little lower, are holding up as well as could be expected with the large supplies coming from bay and river districts, while summer squash, beans and peas, cucumbers, etc., are very cheap, and do not clean up well. Cauliflower and carrots are a little higher.

Onions: New Yellow, River, ctl.	85c@	$1.25
Garlic, per lb	2@	4c
Cucumbers, per box	35@	50c
Cabbage, per ctl		**1.00**
Carrots, per sack	75@	90c
Cauliflower, per doz	40@	60c
Green Peppers, box	35@	40c
Green Peas, lb	2½@	4c
String Beans, lb	3@	4c
Summer Squash, lug box	35@	50c
Green Corn, choice, sack	1.25@	2.00
Okra, box	50@	75c
Tomatoes, box	75c@	1.25
Eggplant, box	40@	50c
Lima Beans, lb	2@	3c

POTATOES.

Sweet potatoes have taken another drop, with more liberal supplies. River whites still find a very fair shipping demand, and while there is plenty of stock on hand, the price is well maintained.

New River Whites	75c@ 1.00
Sweet Potatoes, per lb	3@ 3½c

Dairy Produce.

POULTRY.

Arrivals of Eastern stock continue fairly large, but prices stand about as before on everything but large broilers, which are lower. There is an easier feeling all around, however, the weakest thing on the list being small hens, as White Leghorns are coming forward freely from several California points, and it is hard to get the market cleaned of such stock.

Large Broilers, per lb	23	@24 c
Small Broilers, per lb	24	@25 c
Fryers, per lb	24	@25 c
Hens, extra, per lb	16	@17 c
Hens, large, per lb	17	@18 c
Small Hens, per lb	15	@16 c
Old Roosters, per lb	11	@12½c
Young Roosters, per lb	24	@25 c
Squabs, per doz	$ 1.50@	2.00
Geese, per pair	1.75@	2.25
Ducks, doz.	4.50@	6.00
Turkeys, live		20 c

BUTTER.

Extras have been marked up 1½c this week, with diminishing supplies, a strong demand to fill a Government order bringing quite a shortage. Local prices are now above the level of other Coast points, cutting off the shipping trade, but the market is nevertheless firm. Prime firsts are again on the list.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32½	32½	32½	32½	32½	33
Prime Firsts	—	—	—	—	30	30
Firsts	28	28½	28½	28½	28½	28½

EGGS.

Production continues to decrease somewhat, and extras are a litle higher, with lower grades marked up in sympathy.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	31½	31½	31½	31½	32½	33
Firsts	26	26	26	26	26	27
Selected Pullets	25	25	25	25½	26	26½

CHEESE.

Offerings of new fancy flats have been a little lighter, causing an advance of 1½c, and this grade is firm at the new figure. Other lines are steady as before.

Fancy California Flats, per lb	17c
New Young Americas, fancy	18c
Monterey or Jack Cheese	14@15c

Deciduous Fruit.

The local market for fresh fruit is only moderately active, and with most fruits in abundant supply values show more or less easiness. Berries are especially plentiful, and while raspberries are higher, most other lines are lower than last week. The apple market is easing off, with more effort to sell in the early varieties. Pears, however, are still very firm, with a strong shipping demand and light offerings of fancy stock. Apricots are now in only limited supply, and are quoted higher, while most varieties of peaches are cheap and easy, only carriers bringing as much as 85c. Plums and prunes also are lower, with good stock in fairly liberal supply. Figs stand about as before, with light offerings. Cantaloupes show a rather wide range, river nutmegs being rather easy, and watermelons are hardly cleaning up as well as last week. Seedless grapes are firm, with a strong demand, but other varieties are easy.

Strawberries, chest:		
Banner	$ 4.00@	5.00
Other kinds	3.00@	4.00
Loganberries, chest	4.00@	5.00
Blackberries, chest	2.00@	4.00
Huckleberries, lb.	8@	10c
Rapsberries, chest	7.00@	9.00
Apples:		
New Gravensteins, box	$ 1.00@	1.50
Astrachans	75c@	1.25
Common	50c@	1.00
Crabapples, large box	85c@	1.25
Pears: Bartlett, No. 1, box	1.50@	1.75
do No. 2	75c@	1.00
Apricots, small lug	1.00@	1.25
do large lug	1.25@	1.50
Peaches, box	35@	85c
Plums, crate	50@	85c
Prunes	65@	90c
Figs: Double layer, drawer	1.00@	1.25
Nectarines, crate	75c@	1.50
Cantaloupes, large, crate	2.50@	4.00
Nutmegs, crate	1.00@	2.00
Watermelons, per dozen	1.25@	3.00
Grapes, Seedless, crate	75c@	1.00
Malaga	60@	85c
Fontainbleau	50@	75c

Dried Fruits.

The dried fruit market continues to improve, with a much more active demand for Eastern and export shipment, and packers show a much better disposition to meet the views of growers than at any former time this season. The demand for apricots has been decidedly good, considering the prices asked, and considerable stock has been moved at a sharp advance over the old quotations. Buyers have also been compelled to go out after prunes, and an improvement in the spot demand has placed old crop on the same basis as new crop goods, the amount remaining being very small. Peaches also are bringing 4 to 5c for both old and new crop goods, as it is becoming evident that the amount dried will be much less than last year. Raisins are also higher, and the market is quite strong, the situation being practically controlled by the Associated Company. The New York Journal of Commerce says:

"All advices by mail and wire from the Pacific Coast reflect a strong and advancing market in the various staples. California prunes are particularly strong. Owing to the material shrinkage in crop estimates as a result of a heavy drop due to hot weather, growers' views have advanced decidedly within the past week or ten days, and packers, influenced by this as well as the continued export demand and increasing inquiries from home buyers, are advancing their asking prices. Out of the current estimate of 100,000,000 pounds from California orchards this season, it is stated in some quarters that Europe has already taken 55,000,000 pounds. For the first time this year, Germany is reported to be in the Coast market for large size. Last year's export trade in California prunes amounted to approximately 110,000,000 lbs. or 10,000,000 lbs. more than present estimates of this season's output.

"Peaches are up ½c to ⅝c from the last quotations. Wires received from leading packers quote Muirs in 50-lb. boxes f.o.b. steamer at 5@5¼c for standard, 5¼@5⅝c for choice, 5½@5⅝c for extra choice, 6¼c for fancy, 7c for extra fancy, and 7¾c for Jumbo. Standard, choice, and extra choice yellows are quoted at the same figures as Muirs in those grades, but fancy and extra fancy are ¼c cheaper than the latter. The crop of peaches is reported to be turning out much shorter than expected, owing to ravages of insects and the effects of recent extreme high temperature. Apricots still show an advancing tendency, and some predict a further rise in prices of at least 1c per pound in the near future.

"The advance in raisin prices does not appear to have stimulated buying interest at this end. Some of the outside packers are quoting old fancy seeded at 6c f.o.b., or ⅛c under the quotation put out on Monday by the Associated Company. The latter has not yet made prices on new crop, but in instances 6½c f.o.b. is named on October shipment by independent operators.

Evap. Apples, 1912 crop, per lb	5	@ 6 c
Apricots, 1913	12	@14 c
Figs: White, 1913	3	@ 3½c
Black, 1913	2½@	3 c
Calimyrna, 1913		4½c
Prunes, 4-size basis, 1912	5	@ 5¼c
do 1913	5	@ 5¼c
Peaches, 1912	4	@ 5 c
do 1913	4	@ 5 c
Pears, 1913	6	@ 7 c
Raisins (in sweatbox):		
Loose Muscatels, 1912		3 c
do 1913	3¼@	3½c
Thompson's Seedless, 1912		4½c
do 1913	3½@	3¾c
Seedless Sultanas, 1912		4¼c
do 1913		4¼c

Citrus Fruits.

The call for citrus goods is limited, as usual at this season. Oranges show a wider range, depending on quality, and fancy lemons are a little lower, while lemonettes have dropped quite sharply. Limes, however, are still scarce and bring high prices.

Oranges, per box—	
Valencia	$ 4.00@ 6.00
Grapefruit, seedless	2.50@ 5.00
Lemons: Fancy	6.00@ 8.00
Lemonettes	5.50@ 6.50
Limes	10.00@12.50

Nuts, Honey, Hops, Etc.

NUTS.

There is nothing new in this line yet, as new almond prices have not been announced, though they are expected at any time.

Almonds—		
Nonpareils		17½c
I X L		16½c
Ne Plus Ultra		15½c
Drakes		12½c
Languedoc		11½c
Hardshells		8 c
Walnuts, 1912 crop—		
Softshell No. 1	16	@16½c
Hardshell No. 1	15	@15½c
No. 2		10½c
Budded		17 c

HONEY.

Values are well maintained, as offerings at producing points have so far been very moderate, and most of the first-class stock arriving finds a good market. Lower grades are slow of sale, but are held pretty steadily at quotations.

Comb, white, new	15	@17 c
Amber	11	@12 c
Dark	9	@10 c
Extracted, white	8	@10 c
Amber	6½@	7 c
Off Grades	5	@ 6 c

BEESWAX.

No heavy supply is held here, and with no pressure to sell in any quarter, prices are maintained as before, though the demand is limited.

Light	30	@32 c
Dark	28	@30 c

HOPS.

Buyers are still showing considerable interest in new crop California stock,

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and considerable business has been done around 20 cents.

1913	20 @22 c

Live Stock.

Offerings of live cattle are lighter than for some time past, and prices have gone up a little. Hogs also continue firm and rather scarce, and light stock is higher Dressed muttons and lambs is easier.

Grass-fed Cattle—	
Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7 @ 7¼c
Medium	6½@ 6¾c
Heavy	5 @ 6 c
Hogs: Grain-fed, heavy	8 c
150 to 250 lbs	8¼@ 8½c
100 to 150 lbs	8¼c
Prime Wethers	4¼@ 4½c
Ewes	3¼@ 3¾c
Lambs: Suckling	5½@ 6 c
DRESSED MEATS.	
Steers	12 @12¼c
Heifers	11 @11½c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

The wool market remains dormant, as buyers are taking little interest, and while a good deal of wool has been sold at comparatively low prices, many growers are still holding in hope of a better market.

Spring clip:	
Southern mountain, free	8 @11 c
Northern, year's staple	13 @14 c
Humboldt, year's staple	18 @19 c
do short	13 @14 c

HIDES.

The hide market continues rather firm, as the hides now coming in show somewhat better quality, and the supply is light. The demand, however, is not heavy in this market.

Heavy Steers, over 56 lbs.	14½c
Medium	13½c
Light Steers, under 48 lbs.	12½@13½c
Heavy Cows, over 50 lbs.	12½@13½c
Light Cows, 30 to 50 lbs.	14 c
Kip	14½@16 c
Veal	17½@19 c
Calf	17½@19 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25@ 50c
Dry	75c@ 2.00

HORSES.

Business is limited almost entirely to retail sales, with little stock coming in from the country at present, as conditions are not favorable for the sale of large offerings. The appearing quotations are altogether nominal, as individual sales are subject to special conditions and values are uncertain, though it is hard to sell at satisfactory figures. The market may, however, be favorably influenced by the recent drop in hay prices.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80
MULES.	
1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

DODDER IN ALFALFA.

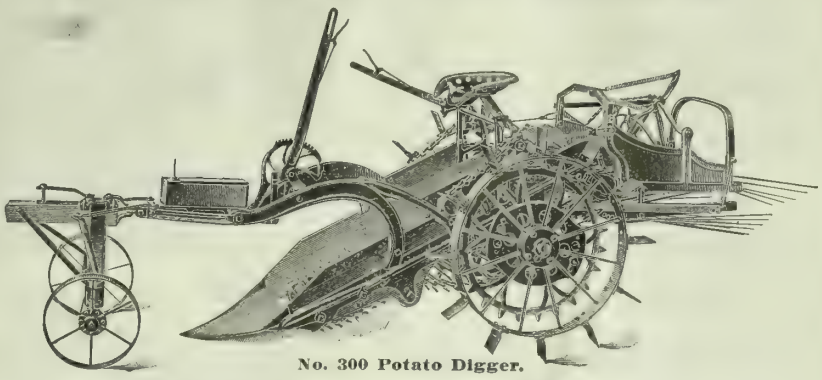
To the Editor: Please find enclosed stem of alfalfa which contains a growth that spreads very rapidly and kills alfalfa in a few weeks. Kindly tell me what to do for it, and what it is.—Subscriber, Gridley.

The plant that is wrapped so tightly around the alfalfa stem is dodder, often called love vine, or lace vine. It is a parasite of the clover family, also attacking some other plants, though alfalfa is its special favorite. Unless destroyed it will keep on spreading and making seed, which possibly may be carried to other spots, for a fine crop of seed was developing on the lot you sent. The only way to do is to cut the alfalfa down to the ground and burn it, burning everything to the roots, then if any comes up from the ground from seed, burn that. It can be completely destroyed in this way.

The dodder starts from a seed, but cannot make much growth from the ground, as it has no way to draw food from air and soil like other plants, and unless alfalfa or some other host plant is available, it dies after it has made a few inches of growth. If alfalfa is present, as soon as it touches an alfalfa stem, it grows fast to it, dying off at the ground and growing vigorously and spreading rapidly through a field. As you say, it kills the alfalfa in a very short time, and it is easily seen that it has to be pitched into hammer and tongs whenever it shows up.

Hoover Potato Digger

FOR CALIFORNIA POTATO GROWERS



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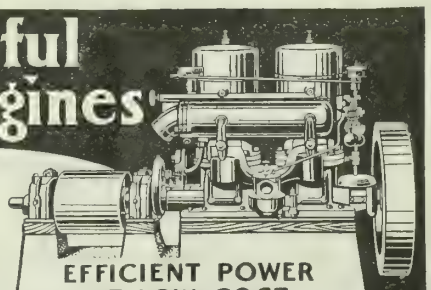

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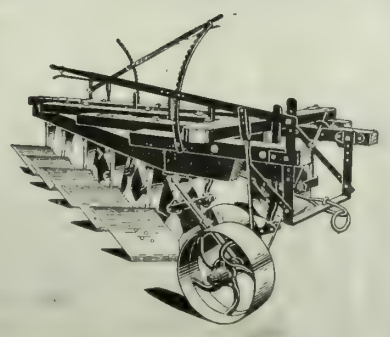

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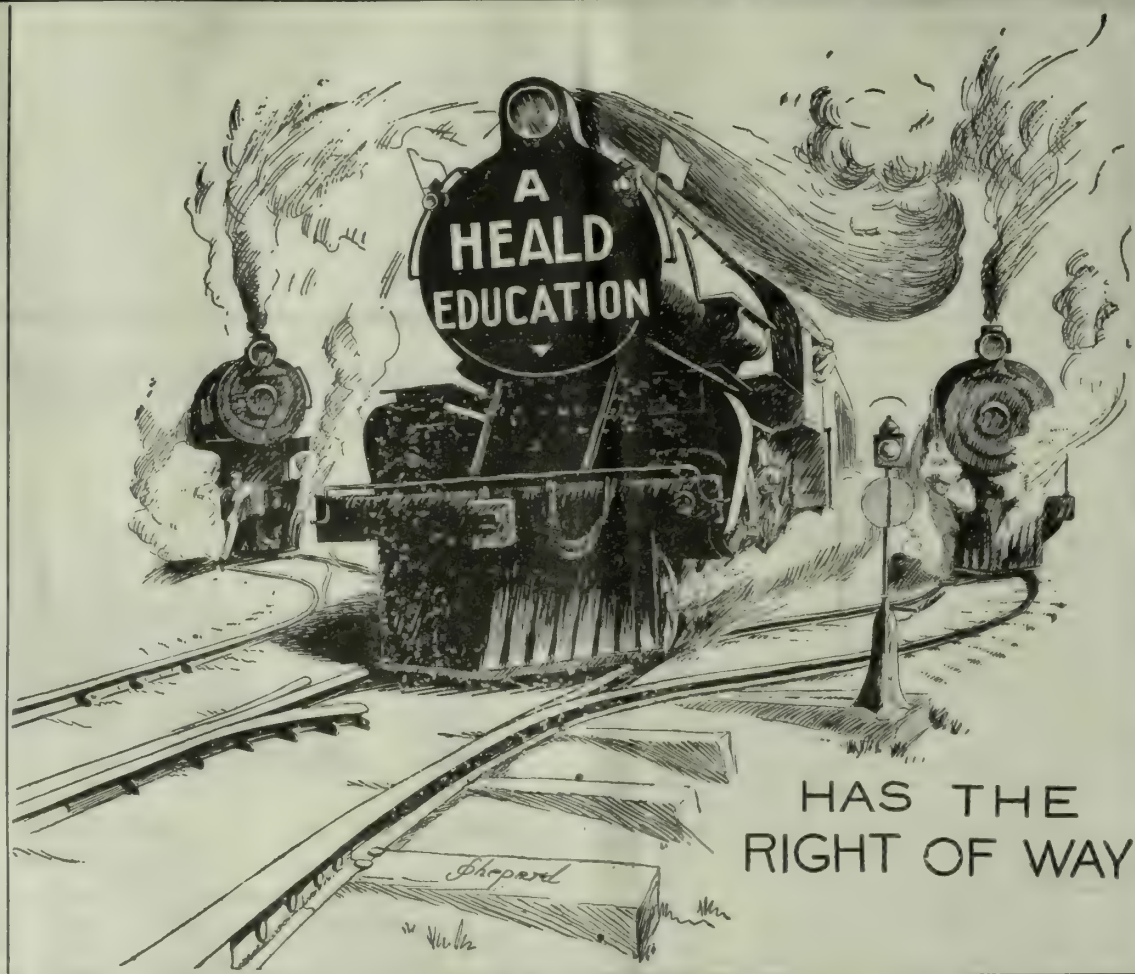

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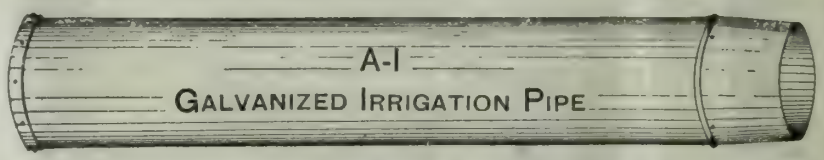

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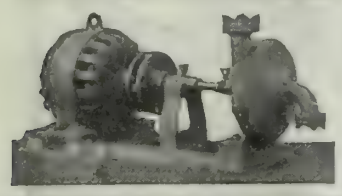

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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 7. SAN FRANCISCO, SATURDAY, AUGUST 16, 1913. Forty-Third Year.

SIX MONTHS OF BLACKBERRIES

[Written for the PACIFIC RURAL PRESS by R. E. HODGES, Santa Rosa.]

For three successive crops of Crandall blackberries on the same vines in the same season, making a continuous picking from June 15 to freezing weather in December or January, prune the vines as Judge T. B. Cannon of Los Angeles county learned a few years ago. His neighbor, Mr. Frost, had cut back the new growth after the berries were off, because they were in the way. In a short time the vines were a mass of bloom and he had a bounteous fall crop of berries. The idea was developed into the system Mr. Cannon has followed with satisfaction on two or three patches, the largest of which is a half-acre set seven years ago in the young family orchard. The first crop from this half-acre this year was 180 crates. The second and third crops usually together equal two-fifths of the first. The second is about half of the third. Two years ago the third alone almost equaled the first. And the berries sometimes sell at $2.80 per crate after October.

Blackberries at their Best

Briars eighteen to twenty-four inches tall, having good root systems, are set with a spade in finely pulverized soil as soon after they are dug as possible to avoid wilting, to the same depth as they were before, four feet apart in rows eight feet apart. They are really vines the first year, requiring no pruning. The space between rows is occupied by cabbage, beans, corn, potatoes, etc.

In the second year, three or four new canes come up. When these are four feet high he cuts off six inches, and laterals start from the leaf axils. When these are thirty inches long their end-buds are cut off and they send out blossoms which bear fruit that fall. These same laterals bear the main crop in their second year, besides sending out new laterals near the base of the old ones about the time the berries are well set. The new laterals bear the second crop, which comes on about the time the first crop is gone. The third crop, borne on the new canes, which have been cut back meanwhile to 3½ feet, blossoms from August till freezing, and the berries ripen from September on.

With usual pruning, only the main crop is obtained, and that comes when berries are plentiful and cheap. By Mr. Cannon's method, the main crop equals or exceeds this, and he has the later ones besides.

Cultivation in the second and succeeding years is done with horse cultivators until the weight of berries bends the vines too far into the space between the rows. Hand hoeing then keeps the weeds down until picking commences. After the last horse cultivation, an irrigation ditch is plowed a foot on each side of each row where it will be shaded to avoid evaporation and baking, and to get water directly to the roots. After the fall crop is off, the ground has become weedy, and it is plowed from the center into the ditches, after which new ditches are plowed for winter irrigation.

Mr. Cannon has found it possible to delay the crop three weeks by withholding water in winter. When warm weather came and water was applied, the plants leaved out in a few days and made rapid growth. But by his system of pruning he has berries as late as they can be grown, anyway, so he supplements the winter rains with irrigation, and begins picking June 15. Irrigation is repeated about every ten days from early spring until the berries begin to turn black. This is a critical time. If water is applied freely now, the berries will be as large again, they will be juicy, and of better color and quality.

Through the second crop, which is light and scattering, water every ten days is enough. Fall showers usually begin in October or November. If they are not rather heavy, they should be supplemented with irrigation, especially when berries are ripening.

The old canes are cut out each winter with a hook of Mr. Cannon's own design, by which he can trim a half-acre in two days, without gloves—a job which was always the worst in the blackberries when he raised them back East. An old 10-inch file is bent by a blacksmith into a hook just a little more than a right angle with a long shank. The inner edge of the hook is sharpened and two holes are drilled into the shank whereby it is bolted to a fork handle about six feet long. In cutting out the old canes, Mr. Cannon reaches down to their base with his long-handled hook, cuts them off with a quick jerk, and pulls them out into the space between the rows without touching them with his hands. This system requires personal attention to every cane, and is perhaps too much trouble for larger plantations. Mr. Cannon makes it pay because he is able to get trustworthy labor.

A most economical system of pruning Crandalls, from the labor point of view, is that of J. B. Wagner of the same county. He also uses no artificial trellises, but leaves the old canes in the hedge-row to support the new growth, and they do it well.

On the day before berry-picking, all protruding new growth is cut back as close as possible to the blanket of bearing canes which covers the mat of dead ones. This removes all hindrance to picking. This year the work was done in his absence, and many stubs of new wood were left six inches above the bearing vines. He objected seriously to this because it raises the general level of bearing wood in a year or two, so high that the pickers can scarcely reach over and up to the center of the row.

When picking is over, both sides of the hedge-row are trimmed off clean till it is left only two feet wide. New growth soon leans out over this and covers it, ready for a crop next year with the berries well outside and handy for the pickers.

Every six years he trims the whole hedge back to a height of two

(Continued on Page 151.)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Aug. 12, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.01	.28	.12	70	52
Red Bluff	.00	T	.00	106	56
Sacramento	.01	.01	.00	108	58
San Francisco	T	.07	.01	86	54
San Jose	.00	.09	.01	102	50
Fresno	.00	.33	.00	106	52
Independence	.00	1.70	.00	96	52
San Luis Obispo	.00	T	.03	86	50
Los Angeles	.00	T	.00	84	60
San Diego	.00	.06	.00	74	62

The Week.

Constructively, this writer is still "Out in the World," as other columns of this issue testify; actually, he is out of the world and back again in his accustomed place with a heart full of gladness, but with a head full of such a maze of thoughts and perceptions that nothing appears clear and definite except the lump in the throat by which the heart region seems to be protecting itself against the confusion in the head. While intellectual and emotional things are adjusting themselves, we shall endeavor to lay hold upon both the adjacent and the remote and gradually withdraw from the perplexities of foreign observations into the unquestioned joys of California experience. Once or twice more, then, we shall formally indulge in foreign facts and fancies before remanding them to such service as they may render in the discussion of agricultural affairs from a California point of view, to which we are so glad to return.

Our associates of the staff have, during our absence, made a paper of which we are proud. Mr. Whitney has demonstrated himself to be a literary producer of capacity and style which reflects credit not only upon those who have had to do with his bringing up but upon his own native spirit, talent and industry, without which all training would have been vain. We share the readers' indebtedness to him and acknowledge it with much satisfaction because it shows that the PACIFIC RURAL PRESS is an institution which is not conditioned, for its power in useful service to the agriculture of California, upon the accident of any individual and that it can command always what may be necessary to the satisfactory discharge of its duty thereto. The group of special writers, whom we always delight to call by name in connection with their expert contributions, and the army of occasional contributors, who give the best of their thoughts and observations for the public benefit, will always constitute a conservatory force to guard the readers' interests and to act as a surety to the publisher for the permanence of his activities and investments.

It is of course a great personal satisfaction to us that such are the facts. One delights to be connected with an undertaking which manifests the power to live and grow and one which, by its inherent strength and value, demonstrates that it has passed the coddling period. The PACIFIC RURAL PRESS is firmly grounded in the esteem and support of its patrons and its future is assured. To assist in extending such esteem and support seems to us more joyous than any phase of activity which we observed in distant parts.

Out in the World.

[BY THE EDITOR.]

[In our last issue Professor Wickson discussed chiefly French systems of rural finance by which money is furnished at low interest for long terms to secure agricultural development and build up rural population and production. In the following, the writer completes the last lap of the circle through European countries, and returns out of the world to the best place in the world: California.—ASSOCIATE.]

We mentioned two weeks ago the flush of patriotic sympathy which spread over the American countenance as French welcoming speakers recalled the attitude of their ancestors toward the American republic at its beginning and drew from the cordial commingling of the descendants of revolutionary heroes in Paris that the ancient fire of friendly feeling was still aglow. But, really, the warmth in France was only a promise of the fervor kindled in the American heart by contact with its closer relationship in Great Britain. No doubt the kinship in tongue had much to do with this delight: it was present and actual, rather than traditional and historic. Wandering about for many weeks among evidently intelligent people who could not speak an intelligible word, and to whom you could only convey evidences of joy and satisfaction by sign language, engendered in the Americans a hunger for opportunity to emit and receive familiar sounds. It was a delight, wholly inappreciable to one who has not had like experience, either to sing or to scold into an understanding ear, as one's mood might require. It was, perhaps, primarily the English speech everywhere heard and overheard which made the weary travelers feel that they were nearing home after traversing nearly a score of unknown lands.

The Leadership of Ireland.

It is an interesting fact that the widespread co-operation in agricultural affairs which is now transforming British agriculture was born in Ireland. Possibly it is an illustration of the trite claim that successful co-operation is the offspring of suffering; for certainly the beautiful island has suffered long and severely, socially and industrially. Before we go on to that proposition, perhaps we had better support the claim that British agriculture is being transformed. Let this item of testimony, presented to the American Commission, go for that:

"The last few years have seen in Great Britain and Ireland the beginnings and the early development of new ideas. In the past the general improvement of farming, the introduction of new crops, the evolution of new strains of stock, or the institution of a new agricultural industry, were due to private and personal initiative which gave England her classic agriculturists of the eighteenth and early nineteenth centuries, whose labors and experiments, as recorded in their diaries and manuscripts, afford such interest to the investigators of today. Then came more modern joint-stock enterprises—the combination and concentration that established such undertakings as the dairy and milk-supply companies of the west of England, the fruit-growing and preserving, cider-making, and other industries in the orchard districts—to mention only a few of the more recent forms of agricultural enterprise. Now comes the introduction of the co-operative system, the successful beginnings of which in Ireland and Great Britain are attracting the attention of the entire agricultural community, and which are not only inducing British farmers to combine but practically to reorganize their industry in the face of the prejudice and opposition of powerful commercial interests concerned to the extent of many millions in the allied industries on which agriculture has been more or less dependent. And yet the British Agricultural Organization Society, based on sound principles and increasing in strength as the years went on, has attained such success that it represents today a national movement."

The Force of Farmers' Societies.

It is thus clearly declared that the advancement of British agriculture and the readjustment of its relation to commercial and manufacturing industries has been assumed by the affiliated farmers' societies of England, Scotland, Wales, and Ireland, and one beholding the operation of this affiliated force is irresistibly led to the conclusion that not only is British agriculture being made more prosperous and profitable, but the foundation is being laid for harmonizing and unifying British national life, which all other appeals to patriotism have but imperfectly accomplished. As we sat for hours at different points on the islands listening to the demonstrations of enhanced prosperity, and the definitions of principles embodied in them, by English, Scottish, Welsh, and Irish leaders in agricultural co-operation, and realized that all of them, forgetting historic rivalries and conflicts, were preaching the same doctrine of the dawning and development of peaceful and profitable basic industry for the whole country, we could not resist the impression that the British millennium was approaching and that the organized farmers were pointing the way thereto. Such being the case, it becomes more poetically significant, at least, that it is Ireland's gift to national prosperity.

Perhaps this relation of things can be more keenly appreciated if we quote two paragraphs from the speech of an extreme political leader at a meeting held under the auspices of the British Government and under the chairmanship of a representative of the existing Ministry:

Mr. John Dillon, M.P., welcomed the Commission on behalf of the Nationalist Party. The Irish people, he declared, were bound to the great country from which they came by a thousand ties of gratitude and admiration. The mere fact that they came from the States was a key to open every Irish heart. This was a very small island, and the fact that a large and influential and representative deputation from the United States and Canada had come over for the purpose of investigating their institutions, with the hope and expectation of gaining information which might aid the people of so up-to-date a nation as the United States in their battle of life was a compliment to Ireland unprecedented and extraordinary. Up to this hour they had never been accustomed to receive in their country any body of sociological inquirers except for the purpose of investigating to what a depth of misery, disorder, and ruin bad government could bring a nation and a highly civilized people.

Times had changed marvelously, proceeded Mr.

Dillon, and there was only one phenomenon to which he would like to direct attention: that was, that in the Department presided over by Mr. Russell and in the Congested Districts Board they would see two Government departments working for the good of the people, in thorough friendship and co-operation with the people of Ireland —a phenomenon wholly unknown in the history of the country till within the last few years, because in the past, as was well known, a Government department was looked upon as an agency of evil.

He would, therefore, suggest to the Commission that they should include within the scope of their inquiry the work and the activities of these two departments, which, outside the National movement and the Gaelic revival, had been, in his mind, most largely instrumental in producing the wonderful improvement in the social and economic conditions of Ireland which were manifest today.

Readers will not, of course, understand us as declaring that the white dove of political peace is at this moment hovering over the British Isles: we only suggest that it may be on its way, and that toward its possible welcome, the British farmer is leading with a force which no other leadership has ever manifested before.

A National Policy Which Failed.

It will now be pertinent to present, in as sharp contrast as possible, the old national policy of England which has failed to produce the widespread prosperity in Great Britain which was expected from it, and the new policy of agricultural development by co-operation of agriculturists. In his address before the American Commission in Dublin, Sir Horace Plunkett, who has been a leader in the new movement in Ireland from its very beginning, said this:

Our Irish problem, recognized but yesterday by statesmen and economists, had its origin in the Industrial Revolution (the name, as you know, given to the economic changes produced by the first large application of science to mechanical industry), which began in England in the latter half of the eighteenth century. Then was struck what has ever since been the dominant note in the national policy of the Anglo-Saxon peoples: an increasing subordination of agriculture to commerce and industry which has characterized the attitude of public opinion, and consequently of governments, toward the several interests and occupations in the national economy. It has been assumed—and until the last few decades the assumption was probably true in its hard facts—that the political strength of a country depended upon industrial development at home and commercial expansion abroad. Not only the economic theorist, but the philanthropist as well, allowed the statesman to proceed as if the age of the city and the factory had come to stay, and the farmer's industry and home were matters of secondary national concern. That was essentially what let us call for brevity and convenience the English policy.

I cannot here enlarge upon the social, economic, and political consequences of the English policy. Enough to say that, by general admission, rural society has been retarded in its development, and is not in line with the progress of the age. Almost everywhere there is a tendency to regard the oldest and the most honorable of human occupations as offering no career for those possessed of enterprise, initiative, and resource. The rural exodus is ever taking all that is most progressive in the country population into the cities. Farm labor is declining, both in quantity and quality. For a time it was assumed that what the country lost the city gained. Now, however, the question is being seriously asked—how far does the modern city, which takes pride in its marvelous progress in every branch of civil life, depend for the physical, as well as the mental and moral, health of its population upon the constant influx which it has enjoyed for many decades of all the best country blood? If this source of the higher citizenship be depleted and deteriorated, is there not a danger that the city may suffer with the country, and national degeneracy set in?

The Irish vs. the English Policy.

Opposite to the English policy which is thus charged with exalting unduly the factory, the shop, and the ship as factors in nation-building, is the Irish policy, which is to build up the countryside and to exalt rural producing industries as relatively more important and fundamental. We call it the Irish policy because those who are now promoting it elsewhere in Britain acknowledge its Irish birth and progress to a point entitling it to national attention. Sir Horace Plunkett speaks thus of its initial motive and its achievement on the Emerald Isle:

It was the Irish mind which first rebelled abainst the English policy—not because it was English, but on the merits of the case. We dedetermined not to wait until the national conscience and intelligence were aroused to the evil tendencies of a mistaken attitude of public opinion, but to take prompt, vigorous, and effective action to deal with the conditions of our own corner of the United Kingdom.

In the year 1889 the end of a conflict, centuries old, between a small class of landlords and a numerous class of not very prosperous tenants, was in sight. Gladstone had, eight years before, carried through legislation which made a vast improvement in the position of the tenant, gave him permanence of tenure at a rent fixed by a state tribunal, with the additional right of selling to the highest bidder the interest in his holding, to which had thus been given a new and greatly enhanced value.

But a new and disturbing factor in European agriculture—foreign competition—had made its appearance with the development of rapid and cheap transportation. The Old Country farmers were hard hit; the Irish tenant losing as much in his industry as he had gained in the improved conditions of his tenure. This led to dissatisfaction with the land legislation. The rents had been greatly reduced, and this displeased the landlord. The lessened profits of his industry made the tenant feel that his rent was still too high. It was generally accepted that the only way out of the difficulty was to abolish the landlord and tenant system and for the state to step in and finance upon liberal terms the transfer of the landlord's interest to the tenant, and make him sole proprietor. This is now the accepted policy of all parties. This huge operation will, from first to last, require the use of the state's credit to the extent of one billion dollars. When the situation first became clearly defined, a few Irishmen, myself among them, set themselves to prepare the farmers for the immense task which lay before them. In the first place, foreign competition had made radical changes in the conditions of the farmer's industry. The market which he supplied —chiefly great masses of artisan populations in manufacturing cities—required that food should be consigned to it regularly in bulk, and of uniform quality. If farmers were not organized they could not fulfill these conditions of the market, and a horde of middlemen, or, worse still, a highly organized "combine" would come in between producer and consumer and exact tribute from both.

It was then that we Irish began to make the kind of inquiry into the rural economy of our competitors on the Continent. The lesson we learned, put in the fewest words, was this: The success of our Continental competitors was due to a combination of organized voluntary effort, with judicious state assistance. Both were necessary, but the part played by the governments was of insignificant importance compared with the astonishing potency of co-operative production ond marketing. Everywhere, too, the co-operative organization of the producers was not only highly effective as a method of business, but was the secret of the political power which enabled the farmers to get the assistance they needed at the hands of the government. We, therefore, set ourselves to introduce agricultural co-operation into Ireland first, and then, upon a foundation of organized self-help—the best definition I know of co-operation—to build a system of sound educational state aid. We began with the dairy industry in the south of Ireland, because it offered just then a unique opportunity. Before we began, an attempt had been made to organize our farmers to do their own dairying business for their own profit upon the ordinary joint-stock plan. These companies all broke down, simply because the joint-stock system is not suitable to the farmer's industry. Under far less favorable conditions, we organized creameries on the co-operative plan, and today co-operative societies, founded upon the ruins of the joint-stock companies, are producing some ten million dollars' worth of butter under a system which gives the entire control and profits of the industry to the farmers themeselves. From the small beginnings of a single creamery brought to birth after infinite propagandism, these institutions multiplied, and the co-operative principle gradually established itself in the Irish rural mind. Today there are approximately 100,000 farmers in this little island engaged in various forms of agricultural co-operative effort, and accounting, probably, with their families, for half a million of the population. I hope that within a very short time the number will be doubled. They combine together to buy seeds, manures, implements, machinery, and other agricultural requisites; to market poultry, eggs, and other kinds of produce. In one instance, between 3,000 and 4,000 small farmers have provided the necessary capital and embarked upon the project of a co-operative bacon factory; while a similar project for the co-operative disposal of beef, mutton, and pork is being wisely and cautiously undertaken. Other societies have been formed to treat the flax crop between the harvest and the sale to the spinner.

The Significance of the Irish Movement.

Manifestly the nature, methods and results of such a widespread and influential movement as the co-operation of British farmers cannot be expounded at one sitting. We have undertaken to set forth, in words better than our own, merely the method and environment of its beginning. The growth of the transplanted idea in England, Wales, and Scotland remains to be considered later; also the forms of general organizations by which it is being propagated throughout Britain, with direct aid and participation of the Government and the support of all political parties. It is with them as with us: no party dares oppose farming progress and prosperity, and it is only fair to believe that all parties honestly desire to advance them.

We choose a closing word on the agricultural situation in Ireland as spoken by Mr. Gill, secretary of the Irish Department of Agriculture, to wit:

"You cannot understand the Irish lesson until you take hold of the fact that with the lifetime of middle-aged men, the Irish farmer had been transformed from a serf into a free landholder, and that there had been a complete social revolution. No keener, shrewder, more intelligent and capable man about his business can be found anywhere than the emancipated Irish farmer."

And assenting thereto and rejoicing in the achievements of such men by co-operation, sat the Lord Lieutenant of Ireland and his wife, Lady Aberdeen, and it was regarded as significant that the Lord Lieutenant, viceroy of the King, should say, when asked to speak, that he considered the visit of the Americans would be of benefit in "bringing into contact all persons interested in the whole subject, persons who had equal interest in, and were desirous of doing their part for, the promotion and attainment of the main objects in view, but who had been, owing to certain circumstances, to some extent working on different lines."

The declaration was regarded as important and was warmly applauded.

Figures from all over the State would indicate a full yield in most lines for California this year. Of course, it is well known that grain and hay will be below normal, but the alfalfa crop will be larger and help make up for the loss of the grain hay.

Benefits of Apple Fertilization.

[By Our Associate Editor.]

A few weeks ago at the request of an apple grower of Sebastopol the results of some experiments in New York were reviewed and commented upon, in which it appeared that under certain conditions fertilization of apples was unnecessary and of so little benefit as not to justify expense and trouble. As a contrast to this and for the sake of getting a little more light on the subject it is profitable to look over the reports of a series of experiments conducted in Pennsylvania in which fertilization was found more than profitable.

Now, admitting that all the experiments were well conducted, there are reasons for reaching such conflicting conclusions and these, by the way, will apply with about as much accuracy to other deciduous fruits as to apples. The critical point is just this, as was pointed out before. Whenever everything is lovely, the trees growing nicely, bearing well and keeping in good health and vigor, fertilization may not be required (though it may yet prove profitable even under those conditions). When a person fertilizes trees that are getting along all right, he therefore is taking a chance, and while he may obtain excellent results, he cannot feel at all sure that such results will come. He may lose his money as often as he gains more.

On the other hand, when the trees are not doing as they should, either in growth or productivity, and the owner cannot account for the trouble through disease, insect injury or old age, it is one of the safest decisions possible that fertilization will fix things up in good shape, provided it is done as it should be and provided moisture and tilth are as they should be. The growth of cover crops may be considered a part of fertilization in this connection.

Need of Fertilization.—The report of the Pennsylvania Station makes the matter of the way to judge the need of fertilization quite clear in the following words:

"In general the characteristics of an orchard that is certainly in need of a fertilizer are those of starvation. They are usually sufficiently familiar to need no extended description. They are found most commonly in the older orchards, especially in those that have once borne well but are no longer doing so, although still fairly free from important diseases or improper drainage. The foliage is sparse and pale in such orchards, and the annual growth stops early and averages short, often not more than a half inch, and from this it may range up to two or three inches. In such cases, one can usually apply fertilizers rather liberally with practical confidence of profits, provided the varieties and general handling are right. Even in such an orchard, however, it is advisable to leave a small typical portion unfertilized to really determine the value of the treatment.

"Under the opposite conditions, such as obtain in most young orchards or in any orchard that is still growing and fruiting well, and retaining its foliage until late in the season, fertilization is much less likely to show a profit. Even in these cases, however, there is often enough probability to warrant a limited trial of fertilization, but only over a relatively small area, and with most of the orchard left unfertilized as a check.

Try it Anyhow.—"These trials are especially necessary, in the intermediate orchards, those on the zone lying between the two extreme types just described. Occasionally this intermediate type will respond very strongly to fertilization without necessarily showing the characteristic marks."

That makes it fairly clear under what conditions a person can reasonably expect decided benefits, and where the probability is rather against decided benefits, and where trials are called for, but results hard to foretell. The most important point left in the mind of the average man now is, how much good will fertilization do?

On this the bulletin summarizes: "The experiments have shown that the fertility needs an orchard may be the most important check on its production. Variations in fertilization alone have resulted in average differences ranging from 50 to 460 bushels per acre annually for the past four or five years, depending on the experiment. These results were accompanied by similar differences in the growth and general vigor of the trees."

The differences referred to are from the selection of fertilizers and it might be said that one fertilizer may be best on one orchard and another on another orchard. Some examples of differences are where a complete fertilizer gave a gain of 78.3% over normal crop, stable manure a gain of 75.9%, nitrates in combination 62.7% and potash or phosphorus in combination with other substances a gain of 15% to 20%, and less when alone.

Other typical experiments gave a gain of 168.8% for manure, 80.5% gain for complete fertilizer and 74.5% gain for nitrates in combination. Still other experiments (that is, on different soil) showed that potash was much more profitable than the nitrogen and complete fertilizer, and again phophorus was a decided benefit, so the point is that for the most profitable results every grower has to make his own trials to a greater or less degree. The fertilizer recommended in general for the best probably results contains about 30 lb. nitrogen, 50 lb. phosphoric acid and 25 to 50 lb. potash per acre.

Methods.—The method of application followed "is merely to scatter the fertilizer or manure broadcast over the surface of the ground, taking care not to get it too close to the tree trunk, where there are few absorbent roots, and extending the applications well out beyond the spread of the branches. To conform more closely with the distribution of feeding roots, the rate of application is made heaviest in the central part of this area, or in general it is applied most heavily under the outer two-thirds of the spread of the branches. This fertilization may be either left on the surface to be washed in by the rains or it may be harrowed or lightly plowed into the soil. Important results should not be expected before the following season, at the earliest, and they may not appear until considerably later and still prove of value." In other words, don't expect results too quickly. In California it is unreasonable to expect fertilizers to become active unless applied so that rains or irrigation can wash them into the soil and then, as indicated above, it may take more than a year after application before the crop really shows the benefits. Annual crops would show benefits quicker.

Scattering Pointers.—In a little space like this no one can discuss this matter very thoroughly in even a single point and the following are just a few conclusions briefly summarized in the bulletin.

"The total plant food draft of a mature and active orchard is greater than that of a 25 bushel crop of wheat in every important constituent except phosphorus. It is practically inevitable, therefore, that sooner or later the output will be reduced or off seasons will be developed in any productive orchard because of a lack of sufficient plant food."

"The mineral requirements of wood are comparatively low. This largely accounts for the fact that young trees usually do not make a profitable response to fertilizer applications, though they may respond well to manure or to other methods of conserving moisture."

"The time required for results to appear has been surprisingly short in all cases where fertilization has proved to be really needed. In such cases, both the value of fertilization and the kinds needed were clearly evident by the middle of the second season, and no material changes have occurred since."

"The influence of proper fertilization is not transient. The gains from it have been greater in the sixth and last year of some of our experiments than at any time before. In one case these gains have exceeded 1,100 bushels per acre. Where the crops of the full years are not too high, the yields usually have been greatly steadied by proper fertilization." (In other words, it has tended to overcome alternate bearing.)

"In general, the influences that have materially increased the yields have also increased the growth. This is true generally, unless either occurs to an abnormal extent."

The summary of the whole thing is about like this: When everything is all right, fertilization stands a chance of being unnecessary; when a good orchard decreases in growth and productivity, the chances are very greatly in favor of fertilization; there will be differences in the results according to the materials and methods used, but proper fertilization gives great profits.

ALFALFA IRRIGATION ON ADOBE.

To the Editor: I have recently purchased a small acreage of land, 20 acres of which is already planted into alfalfa on black adobe soil, the topography being comparatively flat. The parties who planted this piece of land calculated on relying entirely on sub irrigation for moisture, that is, on water which seeps through the lower strata passing from the higher mountain slopes in the east to the lower portions of the valley in the west. As this is the second year and to date I have realized but three crops, I am anxious to prepare the land to irrigate on the surface next spring. Could you refer me to some good treatise bearing on the subject which would enlighten a beginner as to what procedure to follow so as to prepare the land in order to produce heavier and more crops next year than this? As this water is within six and eight feet of the surface, I am somewhat skeptical about planting fig trees around the border of such land. Could you tell me if such a scheme is advisable? Adjacent to this land there is a slight rise to the typography of the land and the soil is of the red variety which is so abundant around the Lindsay district. If the water table is known to rise within six and eight feet of the surface in winter months, wouldn't you consider it as too moist for successful orange growing? If it is too moist, what would you suggest that could be raised successfully on such land?—J. G., Orange Cove, Tulare county.

There are lots of government bulletins and such upon irrigation, but we hardly know any book going systematically into the subject in a way that you desire. As far as that goes, we would say without hesitation that your best method under conditions as you describe to get better yields of alfalfa would be to put in a pumping plant and use surface irrigation pipe. You can thus leave the surface as it is, whereas checking up could hardly be done in decent fashion without making replanting necessary. Besides, the way to use this pipe is on smooth land anyway, and you are all fixed naturally for it. Furthermore the water you put on had better be taken from below, for if you have heavy land with the water table not too far down and then bring in a lot of water from elsewhere you stand too big a show to drown out alfalfa and land both. Write to advertisers of the pipe for catalogs to give description of methods, also, if possible visit some alfalfa ranch where this method of irrigation is practiced, for there are many of them. Before growth starts in the spring you will find it excellent to stir up the surface of the alfalfa land with a spring toothed harrow, or if you have not that tool, with a disc harrow instead. This is good on all land, but especially on heavy adobe.

Six feet of soil is enough for oranges on the land you describe and it should be perfectly satisfactory for this fruit, other conditions being suitable. A slight rise of the water table while the trees are dormant in winter will not hurt anything. On the adobe, figs will grow all right as a border to alfalfa. The plan is entirely advisable.

NO PRUNED PRUNE TREES.

To the Editor: I need not add anything to your comments on the letter published in the Pacific Rural Press of August 9th from Pomona. I spent 25 years in Napa county, and am quite familiar with conditions in Sonoma. I repeat: "It is generally accepted as a fact that the French prune requires little or no pruning," and pruning, as I illustrated, is not simply thinning out. If there is an orchard of French prune trees or even a single tree in California pruned as I outlined, I would like to know it. Localities are nothing to me. I work for California, and shall continue to do so, however much there may be sectional rivalries or disagreements. Leonard Coates.

Morganhill.

Painting the Barn and Fences.

[Written for the PACIFIC RURAL PRESS]

While the farmer keeps up in most all lines of improvements, such as machinery, buildings, and up-to-date equipment, one noticeable point which seems to be overlooked by a great many is the painting of farm buildings.

In view of the fact that perhaps no other line of business has as much invested in buildings as the farmer it would seem that there is a big yearly loss on the farm from neglect in this form.

This may not be true with the farm residence as much as it is with barns, fences, and other outbuildings, which are really the only buildings which the ordinary busy farmer has time or ability to paint properly anyway.

In the first place we wish to impress upon our readers that paint is primarily for preserving the wood and secondarily for looks and not vice versa, as so many present-day people seem to think. While it is true that appearance should be considered, the modern builder seems to provide almost everything for looks and let quality look after itself.

This scheme of painting may be all right for the speculator who is erecting buildings which he proposes to sell in a short time, but as very few farmers will paint with that end in view they should give as much attention to the material used as to the way it looks when applied.

First, then, in painting the barn or other outbuildings, select good material either by purchasing some brand of good ready-mixed paint or else purchasing pure linseed oil and pigments and mixing it yourself.

Providing mixed paints are used, one should understand that there are good and bad mixed paints and the cheaper they are offered the more chance there is of getting a poorer quality, for no one has yet discovered any paint formula which compares with linseed oil as a preservative, and the cheaper the paint the less linseed oil one should expect.

As white lead paint is seldom used on outbuildings the chief interest of this article should center around the mineral paints, such as reds, browns, and greens. In preparing the paint, whether ready-mixed or home-mixed, a barrel is the best thing to use for mixing in, as it will hold nearly enough to cover the surface of an ordinary building, and, what is more important, gives your color a uniform shade. This point seems to be one that the average amateur falls down on, for one often sees a roof or a side with several shades of the same color.

If oil and color are to be mixed, pour in the oil first and then add enough dry color such as the mineral reds or browns to get the desired shade. For rough work these are the only materials needed. Perhaps no definite directions can be given as to the proper way of applying other than to say that when starting the roof paint a stretch about ten shingles wide clear across the roof and contine the work in stretches of about this width. By doing this, laps are not so apt to show and it will be found much easier than any other method. When no roof jacks are available to work from, a 2x4 about 16 feet long may be used by nailing on shingles every 4 or 5 feet, which in turn are lightly tacked onto the roof.

When painting the sides an ordinary ladder is usually handy, and the sidewalls should be done in practically the same manner as the roof, by taking a certain number of boards as a stretch either from top to bottom or from side to side, as the case may be.

The painting of rought lumber is so simple that perhaps more need not be said on the subject except to again state that farmers in general should use more paint, both for the beautifying of their homes and for the preservation of the wood which at present prices is high enough to warrant nothing but the best of paint.

WEED IDENTIFICATION.

To the Editor: I enclose a sample of what I fear may be Bermuda grass, it thrives in the irrigation ditches and as you will note has a double-barrelled way of propagating itself, both by seed and the rooting at joints. Also a tip of another weed that has lately made its appearance in our ditches. It is at least a biennial and perhaps perennial. A rank grower with a ranker smell. I intend fighting both kinds, of course, but would have better courage if I knew whether the pesky things were outlawed, and would also like to know their names? Could you tell me if the Manzanillo olive is self-feltilizing, or should the Black Mission be planted with it?—F. R. W., Denair.

We forwarded the plants to Prof. H. M. Hall, economic botanist of the University of California, for identification and advice regarding management and received the following reply:

"The grass is Crab-grass (Panicum sanguinale). Although rooting at joints, it is only an annual. It produces abundant seed and if not desired, by all means cut before seeding time. If this is done and foreign seed kept out, there will be little trouble. The weed is wormseed (Chenopodium anthelminticum). It is described as an annual, but in California it apparently lasts over winter and so becomes biennial or perennial. It also yields much seed but does not root from the joints." It thus appears that by cutting off these plants before they make seed you will destroy them and you have less cause to worry than you thought.

In regard to the fertilization or pollination of the Manzanillo, it is not necessary to have Mission or other olives growing with them, as the Manzanillo will bear profitably when planted alone. It may, however, be well to plant a fair percentage of your land to Mission, as this is as good, or better than the Manzanillo and it will give a longer harvesting season. The general tendency seems to be toward planting both in the same grove.

APPLES IN MOUNTAIN VALLEY.

To the Editor: Would you give me your opinion as to whether or not apples suitable for shipment East could be grown on land situated in Plumas county in Sierra valley? In the northern part of the valley much of the land is covered with sagebrush and to me seems a sandy soil. A portion has been cleared and wheat is being grown. I have been told that artesian water can be obtained; in fact, I saw a well flowing hot water.—L. V. R., Byron.

Our opinion on the matter is that Sierra valley is rather too high to make apple-growing profitable; that there are too heavy late frosts in the spring and early summer to permit very satisfactory bearing. Apples are the most common dooryard trees on every ranch and in every district where fruit will thrive, so if you cannot find them successfully grown on Sierra valley ranches for family use, the prospects are against their commercial production. If you find them growing and producing well, it is an indication that they would be a profitable crop, markets permitting. A personal investigation of conditions in a district is better than advice based largely on conjecture.

MELILOTUS ALBA.

To the Editor: Enclosed is a slip of clover I find growing in my yard. Could you tell me what variety it is? I think perhaps it is sweet clover. It is very hardy and roots deep. Would it make a good cover crop to put in my apple orchard? And would it be as good as alfalfa as pasture where we have little water to irrigate with? My soil here is light, of sandstone formation, almost on top of the low hills lying east of Monterey bay.—Subscriber, Watsonville.

You are right: the plant is white sweet clover—Melilotus alba. There is great difference of opinion of its feeding value: in this State it is generally condemned and is considered a pest when it gets into alfalfa fields, as it is apt to do through foul alfalfa seed. As a green manure plant it has been often commended because of its free growth and deep rooting. How much harm it may do fruit trees will depend upon the amount of soil moisture: if this is scant the trees will suffer, for the sweet clover is a very thirsty plant. If you decide to try it, your conclusion will be of much public interest.

RECORDING SALE AGREEMENT.

To the Editor: A California land company sells a 'lot' of say, five acres, and, on receipt of a portion of the purchase price, issues to the purchaser an "Agreement of Sale" specifying the amount and manner of future payments, etc. Is it, in any sense, a legal necessity that this agreement be recorded, and if so, within what limit of time following issuance?—W. F. C., Austin, Nev.

Answer by Derham & King, Attorneys, Mills Building, San Francisco.

It is not legally imperative that such agreement is recorded. Its recordation, however, in the office of the recorder of the county in which the land is situated, operates as notice of the conveyance to all subsequent purchasers and encumbrancers, and enables the first purchaser to specifically enforce the contract as against the whole world if it is otherwise enforceable.

Until the agreement is recorded it is valid only as between the original parties, and if the company should, in violation of the agreement, convey the same land, or any part of it to some third person taking it in good faith and for a valuable consideration, in ignorance of the original transaction, and first duly recording the grant to himself, the original purchaser would to that extent lose his right and title to the land, his only remedy being an action against the company for damages suffered because of the breach of contract.

From this it is clear that as a safeguard to himself the purchaser should record the instrument immediately; the law of the State in which the land is situated governs, but in this respect the laws of California and Nevada are virtually identical.

A POOR PANIC.

To the Editor: Enclosed find sample of grass that grows very commonly with the alfalfa in the wetter places. I have a thick stand of this grass on about two acres where the alfalfa has been scalded out, which seems to grow almost as quickly as alfalfa and make nearly as much hay. I would like to learn the name of the grass and its feeding value, and whether it is good for horses.—M. D. W., Biggs.

The plant is Panicum crusgalli. It is a coarse grass usually considered of very little feeding value. We do not recall any account of satisfaction with it. If cut young and mixed with alfalfa it might prove worth having.

FIGURES ON FRUIT ACREAGE.

To the Editor: Can you tell me where I can get figures on the acreage of the various kinds of fruit trees in California? Have been unable to find any.—Subscriber, Lindsay.

There are no figures that can be depended upon. Probably the best available are those published in the PACIFIC RURAL PRESS of January 4, 1913, which were taken from the report of the State Horticultural Commission, Sacramento, with slight amendments. If you write to the Commission you may perhaps get some later and better figures.

BLACKBERRY RUST.

To the Editor: Will Bordeaux mixture control blackberry rust? If not, please inform me what will do so.—Rancher, Grass Valley.

Bordeaux mixture is the material to use. The bulletin on plant diseases issued by the University of California advises cutting the affected plants to the ground and burning them, spraying the new growth with Bordeaux. Leaf spot of the blackberry can be checked by spraying alone.

PRUNING OF LILAC.

To the Editor: We have a white lilac that is very tall and want to cut it back. If I do so, will it bloom next year, or will it harm it?—G. J. L., Oakley.

The cutting back will do no harm and will do good. The pruning had better be done in the fall, as can be expected.

Facts About Wells and Pumps.

To the Editor: I am about to put down a well with a view to irrigating 140 acres of alfalfa. In my district it has been the general experience that the best wells will only afford water for a 4-inch pump for each bore, and that it is rare to gain anything by going deeper than 50 to 75 feet.

May I ask you for information relative to the best construction relative to the following points:

1. What should be the diameter of the well for a pump ranging from 5 to 8 inches in diameter?

2. When it is found necessary to put down several adjoining wells, is it better practice to install a small pump in each well, or to have a single larger pump so connected as to draw from all the wells? I assume that these wells are near together, and tap a common gravel bed.

3. Suppose the wells require a total lift of 30 feet and the pumps are installed in pits 10 feet deep, is there an essential loss of power in case several wells are coupled together, as against a single well of like capacity as the entire capacity of the gang of small wells?

4. What is the relation of the size of perforations of well casings to the character of sand or gravel from which water is to be drawn?

5. What is the relation of the area of all the perforations to the diameter of the casing, so as to insure maximum capacity of well?

6. What is the best practice in developing a new well to its maximum capacity?

7. Can you refer me to a handbook which discusses these and other matters relative to construction of plants for irrigation by pumping?

8. Given a well, is there a fairly accurate method of estimating the proper size of pump to be installed?

Oakland. F. A. L.

ANSWER BY KERNS-SESSIONS, SAN FRANCISCO.

1. The quantity of water that can be pumped from any well depends upon the diameter of the well, the area or amount of well perforation in the casing, and the strata through which the water comes to the well, and sometimes the source of the water-supply, which may be a crevice or fissure in a rock formation of some kind or the outlet over the edge of a supply basin located some distance from the well. Any one of these conditions may be the limiting condition, so that without an exact knowledge of all of the existing conditions, it is impossible to answer the question definitely. You do not say whether the 5 to 8-inch diameter pump is a piston or a centrifugal pump. If you have a piston pump in mind, the well must be large enough in diameter to accommodate the pump; that is, the diameter of the well is determined by the outside diameter of the pump, which varies with different makes of pumps. If you have a centrifugal pump in mind, the well must be large enough in diameter to accommodate the suction pipe and foot-valve. A 5-inch pump would probably have a 6 or 7-inch foot-valve, which would require a well casing not less than 10 inches in diameter; and if you had an 8-inch pump, which would probably have a 10-inch foot-valve, it would require a well casing not less than 14 or 15 inches in diameter. A 10-inch well in the first instance and a 14 or 15-inch well in the second instance are required for mechanical reasons only when a foot-valve is used. These diameters can be dropped to 8 and 10 inches, respectively, when a check or flap valve is used instead of a foot-valve. The normal capacity of a 5-inch centrifugal pump is 700 gallons per minute, and the capacity of an 8-inch pump is 1600 gallons per minute. Whether these capacities can be obtained from any particular diameter of well will be determined by any one of the limiting conditions mentioned above and about which you do not give us information. The writer recalls one 15-inch well that easily gives 2500 gallons per minute; there are lots of 12-inch wells giving 2,000 gallons per minute. In these wells the gravel course and the stratum has considerable depth—50 feet in one instance. As is well known, some wells give little or no water, regardless of the size. When a well gets its water through the open end at the bottom and from a cavity which has been pumped out, the well, of course, does not need to be any greater in diameter than to merely accommodate the suction pipe or foot-valve. In some instances the casing is made heavy and is connected directly to the pump at the top, serving both as a well casing and as a suction pipe for the pump.

2. Several wells connected together interfere with each other more or less, depending on local conditions. The writer has known wells which singly would give 700 or 800 gallons apiece, while three of them, spaced only 30 feet apart and connected together, would give only 900 gallons per minute. In another instance, ten wells, spaced 25 feet apart, could be depended upon to give 10,000 gallons per minute, while a test of any individual well showed only 1600 or 1800 gallons per minute. In the first instance, the water-bearing stratum was a narrow layer of quicksand, and in the second instance the water was drawn from a deep thick layer of coarse gravel. The power that will be used to run the pump, and the system of irrigation more often determine whether a large central plant pumping from several wells shall be used, or numerous smaller plants scattered over the land to be irrigated, and pumping from one well only, is better. If the seepage and evaporation losses are not great, and if steam or gasoline be used for power, then the central plant will be better; but if these losses are great and if electric power can be obtained, then the small plant is better, because the labor operation cost is practically nothing and the cost of distributing the water is saved. If you have a plunger pump in mind, then the scattered wells are the best, without question, because such a pump would be installed only where a very small quantity of water can be obtained.

3. When the pump is drawing on one well, the water may recede to a depth of say 20 or 25 feet below the pump. Now if the pump is drawing the same amount of water from three wells, because of some limiting condition in the perforations or otherwise, the same quantity of water may be gotten and the water may recede only 10 or 15 feet. This would mean a saving of power and, depending upon conditions, of course, the extra cost of additional wells, longer suction pipe, etc., might be advisable. This state of affairs sometimes exists, and several wells, in such cases, are better than one, although they give little more water than one would give. Whether this would be advisable in your case depends on your local conditions entirely.

4. If water is drawn from fine sand, the perforations must allow only a very small opening, so that the sand will not be continually drawn into the well. If the water is drawn through a coarser material, the perforations may allow a larger opening, the idea being that the coarser grains come to the outside of the perforation and collect there, the size of the grain decreasing going further

HERE'S FOOD FOR THOUGHT

In farming, like in anything else, you've got to **get at the bottom** of things to find trouble or to get good results. **A good solid foundation** is necessary in **everything.**

It's what's **under** your soil that's responsible for what's on **top** of it. Now what **is** under **your** soil? Is there a **good** fertilizer beneath it?

A **good fertilizer** is to soil what an yeast cake is to bread dough. It expands it—makes it rise—there is nothing **dead** or "**flat**" about it.

Now to the point. We want you to try

Hawferco Fertilizers

Give your soil a good dose of whatever kind is needed—(there's a **Hawferco** for every purpose) and then watch the "raise." Note the **size** and **quality** of your crop—count more dollars than you ever did before.

Sit down now and write us for the fertilizer you need and we'll tell you WHY HAWFERCO is the BEST on the market.

Hawferco Fertilizers are **scientifically prepared** by men who are experts in what soil needs to make it do its very best. **Hawferco Fertilizers** have **never** been known to fail.

Write US NOW for the Fertilizer You Need

Hawaiian Fertilizer Co.

244 California St.

SAN FRANCISCO

from the casing, because the fine sand, etc., has been washed into the well by the water when the well was first pumped. If the water is drawn through coarse material, the perforations can be large, and they are not of so much importance as when the material is fine. In quicksand formations, special patented perforations and screen devices are used with more or less success.

5. The area of all the perforations influences the velocity with which the water comes into the well. The larger this area, the lower this velocity and the less will be the friction loss through the perforations; or, what is the same thing, the amount that the water recedes when the well is being drawn upon. Well borers have various arbitrary rules for the total area of the perforations, one of which is that they should be six times the area of the diameter of the well casing. When the stratum is thin, it is difficult to get enough perforations without seriously weakening the casing, so that it is largely a matter of judgment just how these perforations should be made, especially when fine material is encountered.

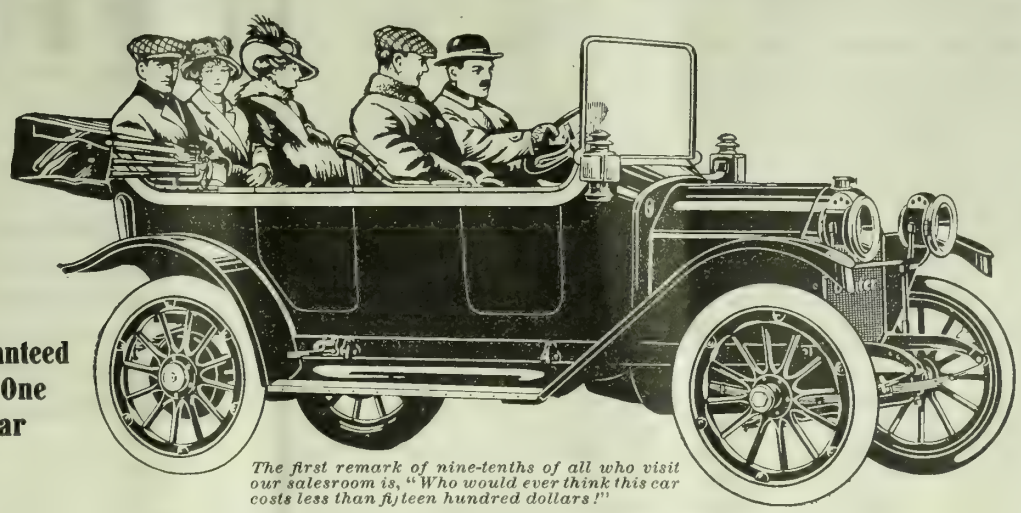
6. The only necessary thing to do is to properly open up the water-bearing stratum. If this is a mixture of coarse and fine material, the well must be pumped slowly at first and without stopping until the material has been graded outside of the casing and around the perforations, somewhat as a filter is formed, with the fine material farthest from the casing, and through which the water slowly starts and moves faster through the coarser material into the casing. As long as any fine material is being pumped, the pumping must not stop, because this fine material might settle and so clog the perforations or openings through the stratum that the flow could not again be established. In pumping through the bottom of the casing from a cavity, the pump should not be started unless provision has been made for a long continuous run, and it should not be stopped until all sand and fine material has stopped coming. Sometimes these cavity wells do not immediately give a flow; it seems that some caving or breaking down of the stratum temporarily stops the flow. In such a case, it is necessary to have the suction pipe plenty long enough, so that there is no chance for air to be drawn into the pump, which would cause it to lose its priming, and the pump must be run steadily, to coax the well, as it were. After pumping only a few gallons a minute for a considerable time, the flow will again start and will finally, after considerable material has been discharged, increase to the normal capacity of the well. In some instances where the expected flow does not come promptly and where the well does not yield to coaxing, the water-bearing stratum is loosened or broken up with a shot of black powder and dynamite. This should be done only by experienced men who know the quantity necessary to do the work without ruining the well or caving in the pit.

7. Such information as you ask for is not contained in any handbook that the writer knows of, and it is not to be expected that it would be, because it comes as the result of practical experience in well boring, which just at this time is undergoing a rapid development along new lines.

8. If you have a well, the only way to find out the proper size of pump to install is to temporarily install a test pump of somewhat greater capacity than you estimate the proper pump should be, and operate it with plenty of power for some time and have some means of measuring the water pumped.

The Chico alfalfa meal mill commenced operations last week.

The Detroiter has created an instantaneous enthusiasm in California



Guaranteed For One Year

The first remark of nine-tenths of all who visit our salesroom is, "Who would ever think this car costs less than fifteen hundred dollars!"

The Car With The Nine Big Features

All the essentials are afforded at $999.99 by the Detroiter, with its nine big features that sum up the experience of the makers of best cars everywhere—cars that sell at prices which average $3,555.80.

Not claims, but facts and figures. It is easy to claim for an automobile superior quality. It is difficult to substantiate such claims even when they are true. In this advertisement we make no claims that we cannot absolutely prove; and we give you solid facts and figures.

The Nine Big Features

1—Long stroke motor.
2—Platform rear spring.
3—Multiple disc clutch.
4—Full floating rear axle.
5—Extra capacity radiator.
6—Enclosed valves, all on one side.
7—Left side drive, center control.
8—Extraordinary braking surface.
9—Ball bearings throughout.

History of the Detroiter

Fifty-one weeks ago the first of the Detroiter advertisements appeared in The Saturday Evening Post. The car was then a year old. Within the brief space of these two years the Detroiter has outstripped over one hundred and fifty other automobile manufacturers in point of sales. This is astonishing. It is one of the two or three most notable successes in the automobile industry.

Detroiter

$999.99

F.O.B. San Francisco

Freedom from Repairs

The long stroke motor and sensible gear ratio (4 to 1) make for slow depreciation; the rear axle cannot give way—its margin of safety is 2000 pounds overload; the ball bearings, of finest grade, do not wear out and never need adjustment as do other types, neither can they bind when the car is distorted by rough roads or accident; and ruinous road shock has no terrors for the platform spring. Such a car lasts.

Abundant Power With its long stroke (1 4/10 to 1 of bore), ball bearing motor, the Detroiter climbs a 15% grade at 28 miles per hour "on high." On second and first speed it climbs anywhere its wheels can find traction. One horse power to every 80 pounds of weight is the proportion—a mighty good one.

A 22% Saving in Fuel Because of its ball bearings and correct power ratio, the Detroiter uses at least 22% less fuel than is demanded by overpower cars of its class; 20 to 25 miles per gallon is its everyday record.

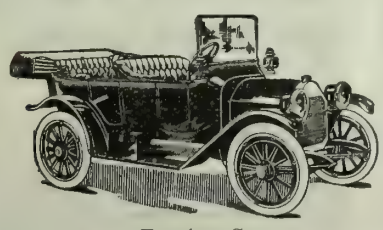
Ample Comfort Not alone in commodious cushionings and wide seats is the beautiful Detroiter comfortable. It has the smooth gait of the platform spring that cradles the passenger weight on three points instead of the two points of the old style fractional elliptic type. The actual amount of added comfort is 33%. Excepting the Detroiter, you will find the platform spring only on high priced cars.

Powerfully Safeguarded The Detroiter has the greatest proportion of braking surface of any car made—one square inch per 9 5/10 pounds. The controlling power of the brake pedal is 3 3/10 times greater in proportion to weight than the grip of the brakes of a locomotive. With its 220 square inches of braking surface the Detroiter is the safest automobile.

Proof Against Overheating Note the efficiency of the Detroiter's extra capacity, tubular radiator; in the endurance race, with women driving, run at Ft. Worth, Texas, on May 16 last, the Detroiter was the only car ($999.99 pitted against others up to $5,000) that did not "boil water"; the entire 108 miles was made on a water consumption of less than a quart; on less than a quart of lubricating oil, and on an average of 22½ miles to the gallon of gasoline. (The Detroiter won.)

Five Models Any one of the five models—touring car or roadster at $999.99. All with the same 25 h.p. long stroke motor, 104-inch wheel base, 32 x3½-inch tires (oversize for long life). Speedometer, Prest-O-Lite or battery lighting system, quick detachable, demountable rims, etc., at the $999.99 price.

A Detroiter Catalog is waiting for you. Write for it.

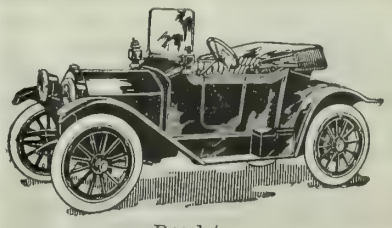


Touring Car.

Carl Christensen Motor Car Co.

567 Golden Gate Avenue
San Francisco

AGENTS, WRITE FOR OPEN TERRITORY



Roadster.

SIX MONTHS OF BLACKBERRIES.

(*Continued From Page 145.*)

feet and cleans out all canes over a year old.

It is a misfortune to the consuming public that when the blackberry is so luscious and melting as some of the belated ones we picked on Mr. Wagner's place on July 17th, it cannot stand even the haul to the local market; and townspeople never know how delicious it is when ripe and fresh from the vines.

5% MONEY

Money Loaned on Real Estate on the Contract Plan. **Interest on $1000 for 11 years, $268.** What rate are you paying? We give 6 months grace. Send for Booklet "E."

F. W. PHILIPS,
405-6-7 Security Bank Bldg., Oakland.

How Co-operation Succeeded in California.

The history of the California Fruit Growers' Exchange, as the greatest co-operative organization in the world, has been often told, but a good story can stand telling, and, besides, it is wonderful how little people know about the real operations and standing of this organization. The following is a portion of an account given by the late J. Arthur Reid, secretary-manager of the Semi-Tropic Fruit Exchange, to Utah farmers contemplating organization, and published as a circular by the Utah Agricultural College.

Things were in awful shape for the orange growers in the early nineties, and we begin the story as the co-operators began to crawl out of the rut. Mr. Reid states at this point:

BEGINNING.—We began by selecting a few good men and hiring them on a salary and placing them in cities where we could get some good business and good results. The fifth year we gained a little, the sixth year we commenced to get stronger, got better prices, and our growers commenced to get more money, more money than the outside grower as a rule. We ran along seven or eight years more, and then our friends came to use again and asked us to unite with them and form a selling agency and take them in with us. They were willing to concede that our method was the correct method of doing business, but they asked to be taken in on the understanding that they themselves would be allowed to continue operating on an f.o.b. basis.

CO-OPERATION IS NOT SPECULATION.—We took them in. Some of our best men said, truly, "Gentlemen, you cannot mix oil and water, and you cannot mix two different ways of doing business; one is a speculative business concern, the other is a purely co-operative growers' organization, and you can't mix these two things together." We had a fairly intelligent lot of growers, but there were enough with influence to bring us to the point of combining with what was known as the California Fruit Agency. Many thought that working together with those people for the benefit of the growers we would be in a better position. The majority of the growers thought it was the right thing to do.

But we soon learned that there was only one way for us to succeed, and that was for us to sell our own goods, and make our own market, and stand by the grower who stood by us. And from that day forward to the present time the co-operative organization has strongly, steadily, year after year increased. There were those who did not agree with us. We have always had them; and you will always have them.

MARKETING FOR TWO PER CENT.—In the early days when we first went into the proposition it was a well known fact that the commission man, the man that sold the goods for us, sold through a broker or any other way whereby he could get on an average of from 8 to 10% for selling the goods. During the last seven years the California Fruit Growers' Exchange has handled something like 200,000 cars of fruit, and the cost to the producer has been about 2%. There is no other business on earth done as carefully and as economically. We pack the goods and send them to market, and we get the market value for the goods. We have a man selling the goods for us, and when they are sold he gets the cash in three days and deposits it in the bank and the money is sent to us. The old charge for picking, packing and loading a box of oranges on a car was 50 cents a box, after the fruit was delivered at the packing house. Our present average for putting a box of oranges on the cars is from 32 to 33 cents a box.

A SUPPLY COMPANY.—We have what is known as a supply company. That supply company buys the material that the packing houses use, and buys the material that the growers use. On one item alone: two years ago we sold vetch seed to our growers for $3.10. The regular retail price was $4.25 to $4.50. Last year we sold our growers all the cyanide and acid that they used for fumigation. Our growers had been in the habit of getting that material from one man, who imported it from Germany. We have saved our growers $200,000 alone on cyanide and acid.

Shortly after we organized, there was a combine on the Pacific Coast known as the Pacific Box Combine. After they had bought all the box lumber in sight and told each box mill how many boxes they could manufacture, they raised the price in a few weeks from 12½ cents a box to 21 cents. One of our good friends was in the East, and he happened to meet a friend of his who had just invested very heavily in the lumber business. The company had just organized and was known as the American Lumber Company. This company was anxious to get the contract. We made a contract with them at 12 cents. They were willing to sell boxes at

TABLE GROVE NURSERIES

FRENCH PRUNE,
IMPERIAL PRUNE,
BARTLETTS,
GRAVENSTEINS,
ALMONDS,
TUSCAN CLINGS,

and all leading deciduous fruit trees grown without irrigation. Pure, clean, and hardy. Order early and secure the best.

Prices reasonable.
Write for particulars.

A. J. GALLAWAY,
R. D. 2, Healdsburg, Cal.

EUCALYPTUS SEEDS

In large or small quantites, 40 species to select from. Write for free pamphlet, "Eucalyptus Culture." It tells you how to sow the seed, raise the plants and plant out in the field. Also describes all the leading kinds, gives their uses, etc.
Trial packets 15c each, 4 for 50c. Write for prices in quantity.

THEODORE PAYNE,
345 S. Main St., Los Angeles, Cal.

100,000 Sour Orange Seed-bed Trees
Navels—Valencias—Tangerines
SOUTHLAND NURSERIES,
R. D. 1, Pasadena and Terra Bella, Tulare Co., Cal.
F. H. DISBROW, Prop.

SECOND HAND PIPE

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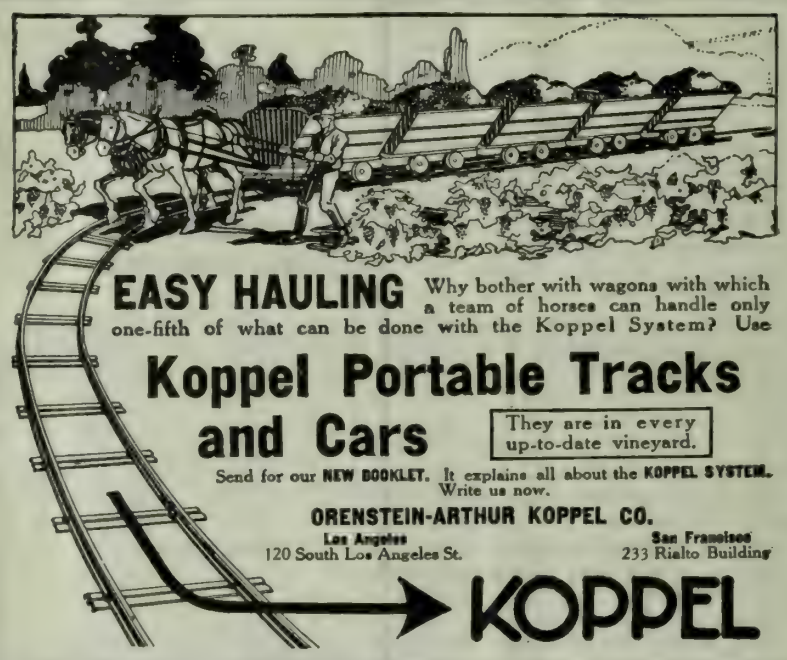

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When we realized the true situation, we said, "It is about time we consulted the growers." We asked them if they would be willing to contribute a small amount of money and establish themselves in the box business and own their own mill if necessary. We asked our associations to sign a contract whereby they would agree to contribute three cents a box for five years to enable us to get a fund to go into the box business ourselves. On the strength of that we had a nucleus. By the end of the first year we had $150,000. That year we went to a large lumber concern which had encountered financial trouble, and advanced the money to tide over their difficulty, and made a contract for several years. A little later they needed more money. We didn't have much money to loan them, but we saw that we were investing in the best timber land on the Pacific Coast, so we borrowed the money and made them another advance. Today the California Fruit Growers' Exchange, through the supply company, owns, through the failure of this lumber company and transfer of its property to us, nearly 26,000 acres of the finest timber lands on the Pacific Coast, with one of the finest box mills in the world.

Distribution Methods.—I want to explain our business methods and our organization. We have on our payroll fifty-six men as agents and assistant agents in various cities. We pay our men good salaries, and their entire time belongs to us. We don't allow them to engage in other lines of business, because we hire them for twelve months in the year. I have heard it repeatedly said by leading business men that never did they see such a fine set of men working for an institution as they found in our employ. The great volume of business that we do is done distinctly with the understanding that treating will not be countenanced in any form. I have been on the road myself and have sold goods, and I have never sold a dollar's worth of goods by treating. It isn't necessary. Our customers think the more of our men because they do not treat. All these years during which we have been so successful, and during which we have handled many millions of dollars, we have never yet lost one dollar by an agent defrauding. Our agents are all bonded to cover possible delinquency.

No Secrets from Growers.—Some people wonder how we keep our people informed regarding our transactions. All over the United States, wherever we have an office, that office is in daily communication with our general office by telegrams. As soon as a telegram comes into our office, if it is in reference to a car, it is given a number and an initial. That initial shows the shipper's name. The number shows where it belongs. Every telegram that comes in is re-written, and at night it is put in the form of a bulletin, which is mailed that night to all the sub-exchanges, and also to all the 126 local associations, so that the next morning the local association managers receive by mail a letter, and in that letter there is a copy of the bulletin, or a copy of all the telegrams that have come in from all over the United States, showing market conditions, weather conditions, sales, giving him an idea, as well as other exchange people, of the condition of the business. In addition to that bulletin we have what we consider one of the most valuable assets in business—our daily shipping sheet, that shows every night the number of cars going to every city, the variety of fruit, and whether a special order or not; and when I open the bulletin in the morning I can readily see whether there is too much fruit going into Chicago, Minnesota, New York, or any other city or State in the country. If there is more fruit going in than we think the market can take and consume at a fair price, we immediately stop cars going into that city, and then we find out if a city here or there cannot take some of these cars.

No Glutting of Market.—The great trouble with the old system was that there was no systematic distribution of fruit. It was something like five years ago that we figured out that we were selling fruit in carload lots in about 600 cities in the United States and Canada, and two or three foreign countries. Last year we sold fruit in 1060 cities in carload lots. We do it because each one of our men in these large centers goes out after the small places. We sell fruit at many places around Kansas City. We don't confine our business to that city. We aim to get all the carload business possible in all the cities in the United States, and this advertising that I have mentioned has been a great help to us. We have kept the cities from being flooded with fruit. The railroad companies give us every morning the total of the shipments the day previous. We know how many we ship and we can easily tell how many the other concerns ship; therefore, we can tell whether there is too much fruit shipped or not.

You may say, "How do you arrange in your packing house that one man doesn't get advantage over another?" After the fruit comes into the packing house and is weight and a receipt is given to the man who brings the fruit, the fruit lot is given a number. Nobody after that knows whose fruit it is.

Good Fruit the Basis.—I can only add in conclusion that there is very much to say on the question of co-operation. Allow me to say emphatically to the individual grower that it is fundamental that he see to it that his orchard is in the very best condition, free from blight and insects, and is healthy and grows nothing but healthy first-class fruit.

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APRICOTS, 1 ton per hour.
PEACHES (freestone), 2 tons per hour.

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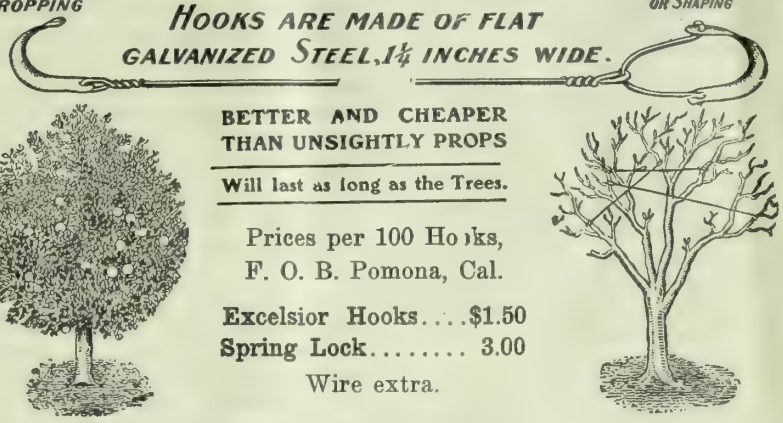

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AGRICULTURAL REVIEW.

WITH THE FRUIT MEN.

According to the Pajaronian, the Watsonville district will produce about 200 cars of dried apricots this season. Buyers are now paying the growers from 12 to 13c. per pound.

Prunes sold at Chico last week on the trees on the basis of 5c. per pound. The crop there is short this season, and as the prunes are finding ready market, no pool will be organized by the growers to dispose of them in bulk.

E. M. Boyd, of Yucaipa, reports the apple crop in the Oak Glen and Yucaipa sections of San Bernardino county to be better than last year in both quantity and quality. Shipping from Oak Glen commenced last week.

The first shipments of table grapes from the Fresno section this year sold for good prices on the Eastern markets. Thompson's Seedless brought $2.90 per crate, and Muscats sold for $2.20 to $2.90.

It is announced that the California Associated Raisin Co. is now in control of the 1913 raisin crop, and with one exception it is the only company that has any of the 1912 crop on hand. Outside packers are now buying from the Associated.

According to the Orange Post, the walnut crop in Orange county will be about as large as it was in 1911, and about 50 tons better than 1912. Harvesting walnuts will commence in about two weeks. The price for the 1913 crop will not be set by the Association until October 10th. However, independent buyers are said to be offering 13 and 13½c at the present time.

Peach-shipping from the lower San Joaquin has practically stopped for the season. The balance of the crop will be handled by the canners.

It now looks as though the prediction of Manager Dargitz of the California Cured Fruit Exchange that we printed two weeks ago that peaches would advance a cent a pound in 30 days would be made good. Already peaches have advanced to 5c, and they may go to 6c before those packers who have sold short will be able to get the necessary tonnage.

Commissioner Beers reports that the apple crop promises to be unusually heavy in Santa Barbara county this season. Walnuts and citrus fruits are also very promising. Many new irrigation plants are being installed, and hereafter the irrigated acreage will be larger than ever.

The Government's July report on the apple crop of California estimates the yield at 72%, which is the same as the average of 1911. Last year the crop stood at 86%. Prices for early apples, already marketed, have been in advance of those last year.

The Anaheim Gazette reports that the total number of cars of citrus fruit to be shipped from that station this season will be about 375 cars, valued at $400,000. On ingenious system of guarding against damage by frost in the sections subject to low temperature is being adopted by the heaviest growers. A system of pipes carrying distillate is being planted in the orchards. One heater will be provided for each tree. This system, it is believed, will never become popular at Anaheim because the damage to the crop in this section last winter, the coldest spell known during the past third of a century, was so slight that the growers think expensive methods of protection would be an unnecessary expense.

The Fresno Republican states that buyers have been through that section offering growers 3½c per pound for all the figs they can get. The crop this year will be a full yield.

Up to August 7th there had been shipped from Vacaville this season 603 carloads of fruit, as against 490 cars to the same date last year.

James Madison, manager of the California Raisin Association at Fresno, stated in an interview recently that in view of the shortage of the wine-grape crop this season, it was his opinion that growers would receive $10 per ton for their grapes, notwithstanding the action of Congress in trying to impose a tax of $1.10 upon fortifying brandy.

At a meeting of peach-growers held at Fresno recently, it was decided to issue a statement recommending growers to hold their dried peaches for 6c. They took the ground that: "In view of the present short apple and peach crops, and the financial and market conditions and prospects, would hereby state that we would think it unwise to sell for less than 6c per pound."

FRUIT SHIPMENTS SHOW GAIN.

Up to August 9th, deciduous fruit shipments from California show big gains over last year. This fact is very surprising in view of the expected shortage on account of the two dry seasons preceding, but is partly accounted for in the increase of acreage set out in recent years, the large increase in irrigated area, the good prices received in the East, and probably the most important reason of all is the earliness of the season. Probably when the close of the season comes it will be found that the total shipments were less than those for 1912. Last year on August 9th there had been shipped 4,429 cars of deciduous fruits, while to the same date this year 5,807 cars, or a gain of 1,378 cars, had gone to Eastern markets. The further fact will also be demonstrated that the tonnage of dried fruits will be very much less than that of last year.

The big transportation companies operating in this State give out reports showing heavy shipments of products in other lines as well as fruits. For instance, the Imperial valley shipments of cantaloupes, watermelons, and grapes show a heavy increase. Up to August 4th, 3,508 cars of cantaloupes, 461 cars of watermelons, and 112 cars of grapes had been shipped. Cotton is expected to swell these figures with a 19,000-bale crop.

AGRICULTURAL NOTES.

The crops around Lovelock, Nevada, are reported as being fine this season. Alfalfa has done well and the value of the crop is placed at $800,000; grain, vegetables and sugar-beets will bring up the total value of productions to over $1,000,000.

The big lima bean cannery at Sawtelle is running day and night to put up a half million cans of this vegetable.

Word comes from Biggs, Gridley, and Nelson, in Butte county, that there is being stored in warehouses more hay and grain than ever before. Crops of all kinds have been good in those sections.

The blackeye bean crop in Orange county is about harvested, and the yield has been better than expected. The 2,000 acres in beans around Live Oak, Sutter county, also promise a big crop.

Among the judges who will make the awards of ribbons at the State Fair are: J. A. Logsdon, of Blackburn, Mo., who will pass on the saddle horses; C. J. Hinds, of Oakland, who will judge poultry; Robert V. Moore, of Lankershim, who will award the pigeon and pet stock ribbons. The State Agricultural Society is endeavoring to secure Prof. W. L. Carlyle, of Moscow, Ida., for the draft horses and dairy stock. Prof. Gordon H. True, of the University of California, will likely officiate as the assistant livestock judge. F. M. Washburn, of Sacramento, will be superintendent of the poultry pavilion. W. P. McNair, of Calgary, Canada, will start the harness races, J. L. McCarthy, who officiated in that position last year, having been made the secretary of the State Agricultural Society.

LAND IMPROVEMENTS.

The Gray Bros. ranch of 1,000 acres, east of Oakdale, was purchased last week by Peter Saturno, of Reno, Nevada. The new owner plans to set the land to fruit trees and alfalfa.

An owner of reclaimed land in the Sacramento river delta, last year used ground carbonate of lime on newly reclaimed land with the result that the oat hay crop this season was nearly four tons per acre. The balance of the ranch is to be treated with lime.

Plans are being made to divide drainage district No. 32 and organize from it a separate district. The district was authorized by an act of the legislature in 1911 and contains a large area that is not in need of drainage and another large area that is not irrigated.

The litigation affecting the right to use the water of Walker river in Nevada has been settled, and the 125 members of the contesting association are prepared to at once commence the reclamation project which will place under irrigation 110,000 acres of land in Lyon county.

The work of subdividing the Fair ranch on the Sacramento river into small tracts is nearly completed, and already several sales have been made.

C. W. Bowers is platting and selling small tracts of land near Davis. The land is very fertile, and by sinking a big well plenty of irrigation water has been secured.

CROP REPORT FAVORABLE.

The Government's August grain report, eagerly awaited because of the reported serious damage to corn from drought and other conditions, was issued on August 8th. It shows the condition of the principal crops on August 1st and estimates the yield and production of each as follows:

Corn—Condition 75.8% of a normal; indicated yield, 25 bu. per acre; estimated production, 2,672,000,000 bushels.

Winter wheat—Preliminary estimate of yield, 16½ bu. per acre; total production, 511,000,000 bu.; quality, 93.7 per cent.

Spring wheat—Condition, 74.1%; yield, 12½ bu. per acre; production, 233,000,000 bushels.

All wheat—Yield, 15 bu. per acre; production, 744,000,000 bushels.

Oats—Condition, 73.7%; yield, 26.8 bu. per acre; production, 1,028,000,000 bushels.

Oats remaining on farms August 1st, 103,900,000 bu., compared with 34,872,000 bu. last year and 67,793,000 bu. in 1911.

Barley—Condition, 74.9%; yield, 23.1 bu.; production, 168,000,000 bushels.

Rye—Acreage, 2,134,000; preliminary estimate of yield, 16.3 bu.; of production, 35,000,000 bu.; quality, 94 per cent.

White potatoes—Condition, 78%; yield, 92 bu.; production, 339,000,000 bushels.

Rice—Condition, 88.7%; yield, 33.10; production, 27,000,000.

Hay—Condition, 81.8%; yield, 1.33; acreage, 48,293,000; production, 64,000,000.

Apples—Condition, 52.2 per cent.

One of the many styles and sizes of Fruit Trucks I manufacture. Sixteen years of experience has taught me how to make trucks that will stand the hard knocks and that will last. For prices and further particulars, address

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PEDIGREED AND TRUE

Our soil grows good roots and a hardy tree, while out foot-hill district is free from every disease or pest.

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Our Assortment is Complete.

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NURSERYMEN ATTENTION!

WANTED—Position as Nursery Sales Manager.

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Address RESULTS, c/o Pacific Rural Press.

Soils of the Orange Belt of Southern California and Their Treatment.

[Written for the PACIFIC RURAL PRESS by GORDON SURR, M.E., of San Bernardino.]

Well knowing the difficulties of this subject and being fully aware that "fools rush in where angels fear to tread," the writer has, nevertheless, prepared this paper in the hope that it may interest some growers whose ideas and methods appear to be due to darkness rather than light.

NITROGEN AND ORGANIC MATTER.—The soils of the orange groves of this region are mainly or wholly derived from granitic rocks, and, while the humus itself is high in nitrogen, the total amount of organic matter and nitrogen is usually decidedly low, in fact, the soils in many cases are so recent, geologically, that they largely consist of coarse rock fragments. The finer the particles, the greater I find is the proportion of mineral plant food soluble in weak citric acid. Humus has been termed "the life of the soil," although, strictly speaking, this applies to the decaying organic matter rather than to the actual humus, for, as is well known, the decomposition of organic material induces bacterial activity and gives rise to the formation of acids which liberate mineral plant food. As a striking illustration of the value of rotting organic matter, the work of Sam McCall, an ex-slave, may be mentioned, who has succeeded in making a so-called "worn out" farm in Alabama more fertile than the original virgin soil merely by plowing under crop residues. Yet, in spite of the urgent need and the deficiency, much organic matter is destroyed and burnt up by exposure to the hit sun through constant stirring of the soil, in fact, as far as organic material goes, the less cultivation the better. Sunlight, moreover, suspends the action of the valuable nitrifying bacteria and eventually kills them. The manifold direct and indirect advantages of growing and turning under nitrogen-collecting cover crops (legumes) need not be gone into here, but suffice it to say that practically any cover crops are better than none, and that it is almost criminal to burn weeds and vegetable matter that would decompose in a soil. The trouble is that cover crops are usually turned under in the spring and much organic matter and many bacteria destroyed by cultivating the bare soil during the long hot summer, a loss that could probably be reduced by shallow cultivation. There should be sufficient deep cultivation, however, to keep the roots of the trees from working to the surface, deep irrigation furrows being great helps in this respect.

A plan that has been followed for some years on a deciduous fruit ranch in Placer county, California, would doubtless greatly benefit many orange groves. Every other strip between the rows of trees, across the slope of the ground is seeded with burr clover or vetch in September, and the crop is not disturbed until the following September, when a double disc harrow is used to mulch and cut in the dry crop, seeds and all. The latter produce a good volunteer cover crop which is then plowed under the succeeding spring, the alternate strips being similarly treated in due course. In this way cultivation is reduced by one-half and there is likewise little erosion, or washing away, and consequent loss of the fine and best part of the soil. Were the whole orchard planted at once, and this system otherwise followed, all the soil would be bare every other summer. The above is a brief summary of a full account kindly furnished the writer by Mr. A. C. McCann, who is a deep student of soil fertility.

With the necessary water available, cover crops through the summer should be excellent. On July 5 last I visited Mr. R. S. Thompson's grove at Highland, Cal., and saw there a fine crop of buckwheat, planted April 30, and just beginning to go to seed. When gone to seed this could be turned under and another crop immediately started, providing sufficient water could be had. Mr. Thompson finds the temperature of the soil under the buckwheat to be much lower and of far less range than in adjoining bare orchards, thus favoring bacterial activity. A leguminous crop would add nitrogen from the air, being ahead of buckwheat in this respect, and clover and vetch are, therefore, in common use. Some are now trying alfalfa, which would appear a good thing, although the seed is expensive. The seed, by the way, for Mr. Thompson's thirteen acres of buckwheat cost $18. Alfalfa, once started, however, could be allowed to go to seed and crops repeatedly raised and turned under with one original sowing, if enough water could be obtained. The deep roots of alfalfa would be of great service in letting air into the soil and in breaking up plow-sole. The natural temptation to cut and take crops of alfalfa hay from the orchard must, of course, be resisted, for although, owing to bacteria, alfalfa and all legumes can get nitrogen from the air, mineral plant food is thereby removed, to say nothing of the nitrogen and organic matter which should have gone into the soil.

Barnyard and sheep manure are also good sources of humus-forming materials and of direct fertilizing substances, and, should immediately available nitrogen be required on account of a lack of rotting organic matter in the soil, small doses of nitrate of soda may be used. Nitrate of soda is very soluble, hence what is not taken up by the tree is soon dissolved and carried away, and it is a good plan to apply gypsum with the sodium nitrate to prevent the formation of "black alkali" (carbonate of soda). Nitrate of lime is really better than nitrate of soda, but it is nasty stuff to handle. Sulphate of ammonia is another concentrated and readily available form of nitrogen.

PHOSPHORIC ACID.—The phosphoric acid in the soils of this orange belt is doubtless mainly due to the presence of the mineral apatite and of its decomposition products. Apatite is a lime phosphate occuring in practically all rocks, though usually in minute crystals and in relatively small amounts. Dr. Bernard Dyer, who first proposed the use of citric acid in soil analysis, found a close correspondence between cultural results and the quantities of soil ingredients extracted by a 1% cold solution of citric acid, numerous determinations of California soils having corroborated Dyer's tests to a remarkable degree. Based upon comparisons of cultural experience with the amounts dissolved by this weak citric acid, which are the only safe guides in such matters, Dyer estimates that a soil should contain from .01 to .03% of available phosphoric acid and from .005 to .01% of available potash, in order to have a sufficiency.

The term "available," as here used, signifies the quantities dissolved by a 1% cold solution of citric acid, which is approximately the strength of the acidity of the roots of a large number of plants and of citrus trees. The limits naturally depend in part upon the kind of crop grown, and hitherto I have found the available phosphoric acid in these soils to exceed Dyer's maximum. Should, however, the application of phosphorus be desirable, natural or raw rock phosphate is a comparatively cheap form, and when finely ground, the phosphoric acid gradually becomes available, providing sufficient decaying organic matter be present in the soil. Hence the introduction of organic material also makes possible the use of cheaper phosphates than those commonly employed in this region. In some recent Government experiments, wheat seedlings were grown on two types of soil, known as the Norfolk fine sand and the Portsmouth silt loam. The soils were treated with various phosphatic fertilizers and the plants were weighed after growing three weeks, the weight of the untreated plants, or checks, being taken at 100 for convenience. In the case of the Norfolk fine sand the average weight of the plants was 98 with acid phosphate (16% phosphoric acid), 119 with Tennessee raw rock phosphate (35% phosphoric acid), and 157 with calcined phosphate, while the average weight of the plants grown on the Portsmouth silt loam was 108 with acid phosphate, 132 with Tennessee raw rock phosphate and 125.7 with calcined phosphate. (Bulletin 95, Bureau of Soils, page 18.)

Although these were only pot tests, they at least indicate that the phosphoric acid in finely ground natural phosphate rock may not be as slowly available as generally supposed. The writer tested some Idaho raw phosphate rock, of which 60.4% passed a 100-mesh screen, and found that .4195% of phosphoric acid was dissolved in ten days by a 1% cold solution of citric acid. In using raw phosphate, however, it is a good plan to apply it some time, say a year or two, before it is actually required by the trees, taking care to thoroughly work it into the ground, for it has little or no value as a top dressing. Even soluble phosphates are retained by soils to a great extent, so there is practically no loss in keeping a good supply of raw phosphate on hand in the soil, well in advance of the need of the trees. Until an adequate amount of rotting organic matter has accumulated in the soil it may be necessary or desirable to apply the more soluble phosphates, such as treated bone or superphosphates. In manufacturing the latter, about a ton of sulphuric acid is used to a ton of raw phosphate rock, making two tons of superphosphate, and, of course, the buyer has to pay for the labor and for the sulphuric acid, which latter may be actually injurious.

POTASH.—Granitic rocks and soils are usually comparatively poor in phosphoric acid but rich in potash, owing to the presence of potash feldspar and its decomposition products. So far, the lowest amount of available potash I have found in the soils of this region has been slightly in excess of Dyer's maximum, referred to above, and, as the total content of potash is doubtless large, the aim should be to liberate what is already in the soils rather than to add it directly. Here again decaying organic material is an agent of great value as, likewise, is carbonate of lime. Oranges contain, on an average, just four times as much potash as phosphoric acid and considerably more potash than any other oxide of mineral origin; over twice as much potash as lime for instance, but, in spite of the much heavier draughts upon it, there will be potash, in many cases, in these granitic soils when the original stock of phosphorus has been practically exhausted. It is of great interest to note in connection with potash that a larger yield following its application may not be entirely due to its actual value as plant food, for sodium and magnesium salts produced essentially the same increase in the famous Rothamstead experiments and others, probably in part owing to the potash set free by the action of these soluble compounds upon silicates.

LIME.—A proper amount of carbonate of lime is highly desirable in soils and it is slowly formed by the decomposition of certain silicates, such as lime-bearing feldspars and hornblende, which occur in the granitic rocks from which these soils are derived. Lime carbonate, however, is readily dissolved from soils and its formation may, therefore, not keep pace with its removal, hence, in many cases, the application of ground limestone is excellent policy, for carbonate of lime improves the physical condition of soils, aids desirable bacterial activity, releases potash and phosphoric acid and is otherwise beneficial. The quantity of lime, present as carbonate in these soils, cannot be calculated from the percentage of carbonic acid, for this latter is doubtless also combined with other bases.

MAGNESIA.—Magnesia is an important plant food and, in general, these soils are well supplied with it. An excess of magnesia over lime, however, may be detrimental and, for orange trees, it seems desirable that the soil should contain about twice as much lime as magnesia.

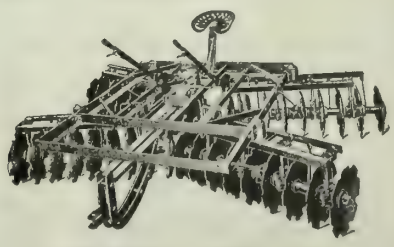
(To be Continued.)

SLOW ACTING POISON.

To the Editor: I have tried the receipt for grasshoppers printed in the paper of June 7th, and have found that the grasshoppers like the dope, but the poison does not have much effect on the hoppers. I have mixed as per directions and have put some in a glass jar and put four hoppers in with the poison. They went right at it, but in eight hours three of them were yet alive and in 24 hours one of them was yet alive. I have mixed some more arsenic with the bran and have tried it again, and in 18 hours there were two out of four of them alive. I will try Paris Green and see if the poison will work better. I know it used to work fine on potato bugs.—J. G. R., Napa.

The poison ought to work a whole lot quicker than that, but if it spoils their appetites, and they die after all, you get your money's worth. A sick grasshopper is not going to eat much. Possibly the arsenic was not as high strength as it might be, but the probability is that it was not evenly distributed as it should be. Arsenic is so much heavier than bran that it will sink to the bottom unless a a great deal of care is taken.

Do not waste your time and money with Paris Green instead of white arsenic. Practically all of the poisoning effect of Paris Green is from the arsenic it contains, which is only half as much as white arsenic itself, and white arsenic is in a much more active form than the arsenic in the Paris Green. You will have to use twice as much Paris Green as arsenic, and pay more per pound.



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Stockton, Cal.

Wholesale Distributors.

BOYS Send 25c and get "The Farmer Boy" 6 months. The only paper in the world published just for you. Send today to E. E. Barley, Editor, Exeter, Cal.

The Profit From Big Producers.

When wonderful records are made from pure-bred cows, people may perhaps remark to themselves, even though they may be anxious to get bulls of like breeding: "Those records are too good to be true, and it will cost more to obtain such great production than the milk and fat are worth."

In the following letter from A. W. Morris & Sons, Woodland, the exact figures relating to cost and profits of a big production are given, showing that big producers are as much more profitable than ordinary cows as their records are greater than ordinary records. It shows that, aside entirely from the immense benefits to the dairy industry from developing such wonderful producing strains, there is a great profit in making the cows produce heavily. Furthermore, since A. W. Morris & Sons are among the foremost Holstein breeders of the world, the methods of feeding described provide an excellent lesson to other California stockmen. This is one of the most valued contributions received for some time. Their letter states:

"Believing that your readers would be interested in a brief account of our methods of handling cows on yearly test and in getting an idea of what sort of an income they bring us, we offer the following statement of the yearly test of our heifer Tilly Alcartra, who recently brought a new record to California. This young cow as a junior three-year-old (with second calf), produced, under semi-official test, 21,421.3 lbs. of milk and 672.98 lbs. of butter-fat, equivalent to 841.22 lbs. of butter on the 80% basis, taking first prize in the Holstein-Friesian Association of America and breaking the record for the breed in her class. During her entire year, this cow ran out with the test herd, only being in the barn during milking hours, and was not blanketed or in any other way especially cared for. She had access to drinking water at all times and was fed freshly cut alfalfa in the corral feed racks, and hay, chopped stock beets, and grain in the barn at milking time. The stock beets and fresh alfalfa were each fed for half the year as the succulent part of the ration. Her grain consisted of a mixture of two parts rolled barley and one part bran, the amount named in the following tabulation being an average, as she was fed somewhat more during the early part of the year and less during the latter part of the year. Her cost and income for the year were approximately as follows:

Cost		
Feed:		
Alfalfa hay (including waste), 30 lbs. per day, or 5.5 tons @ $10	$ 55.00	
Stock beets, 40 lbs. per day for 6 mos., or 3.7 tons @ $2.50	9.25	
Fresh alfalfa, 40 lbs. per day for 6 mos., or 3.7 tons @ $2	7.40	
Bran, 4 lbs. per day for year, or 1460 lbs. @ $1.30	18.98	
Barley, 8 lbs. per day for year, or 2920 lbs. @ $1.35	39.42	
Labor:		
Milking	40.00	
Miscellaneous (marketing cream, hauling feed, etc.)	5.00	
Total cost		175.05
Income		
Butter-fat, 673 lbs. @ 40c. (av. sweet cream)	$269.20	
Skim-milk, 197.39 cwt. @ 20c	39.48	
Total income		$308.68
Net profit		$133.63

($133.63 will pay 7% interest on $1909.)

"The above estimate does not include the manure, which is of considerable value to our soil, nor does it include the biggest item of all to us—the calf. It must be kept in mind that the above figures place the feed at market prices, but as we raised all the feed on our own place (with the exception of the bran) she really cost us much less; or in other words, her net profit was really greater than figured.

"Of course, all our cows do not do as well as this, but we selected a good cow with a large record to show the fact that our biggest record cows net us the most profit. This would almost seem self-evident, but there seems to be a too prevalent idea abroad that the cows making the best records cost so much to feed that they really do not pay. Surely such an idea cannot long stand in the light of such facts as we are here giving.

"With such good cows to show what can be done in making dairying profitable, we believe the dairymen of the State will not be long in doing all in their power to improve the blood of their herds; for it is the few extra pounds of butter-fat from each cow that bring in the profit.

"Yours for good dairying,
A. W. Morris & Sons."

"Woodland, Cal., Aug. 2, 1913."

LIVESTOCK AT THE STATE FAIR.

Although the premium list for the State Fair has been somewhat delayed, it has no doubt by this time been received and looked over by the different breeders who expect to exhibit. That this list is meeting with the approval of livestock breeders is evidenced by the large list of those we have visited who are preparing their stock for the show.

There are too many different divisions and prizes to be enumerated in these columns, so we only give a short resume of them.

In the horse division prizes are offered for stallions and mares of various ages, foals, get of sire and produce of dam by the Fair Association for the following breeds: Percherons, Belgians, Clydesdales, and Shires. Besides these prizes the Percheron Society of America offers a number of special prizes for that breed, and the same thing is true with the Shire Horse Society of London, England. The Fair Association also offers prizes for grade geldings and grade mares of any breed, providing they were bred in California.

Coach horses, standard-bred horses, saddle horses, harness horses, ponies, and mules are all classes which will receive generous awards.

In the beef cattle divisions there are a good many sections, including bulls and cows of various ages, aged herd, breeder's young herd, calf herd, and groups. The beef breeds mentioned in the premium list are Short-horns, Herefords, Aberdeen Angus, Galloways, Devons, and Red Polled. Both the Hereford and Short-horn Associations have agreed to give special prizes, which make exhibiting in these breeds especially attractive.

The dairy cattle will no doubt be one of the most interesting of the livestock divisions, and liberal premiums have been offered by both the Fair Association and the Holstein and Jersey breed associations for the following sections: Bulls and cows of various ages, aged herd, breeder's young herd, and calf herd. The breeds which are eligible for entry are Jerseys, Holsteins, Guernseys, Ayrshires, Brown Swiss, and Dutch Belted. The milking contest will be held for five days during the Fair and promises to bring out a large list of entries, as the prizes are very liberal.

A new prize which is being offered this year is one of $400 for the herd of not less than 20 cows that has the highest average production of butter-fat in a regularly organized cow-testing association, providing two cows, selection of which and a display of records of production by the herd, be approved by the Dean of the College of Agriculture, University of California, are exhibited at the State Fair. This seems to be one of the best features offered this year as far as the advancement of dairy methods is concerned, and should bring out some surprising data from members of the different cow-testing associations.

The following sheep breeds are listed with suitable awards in their various sections: Rambouillet, American or Delaine Merinos, Shropshires, Hampshires, Southdowns, Oxfords, Cheviots, Dorset Horns, Lincolns, Cotswolds, and Leicesters. In addition to the regular prizes, the American Hampshire Sheep Asosciation offers special premiums for the Hampshire breed.

Prizes will be offered for range sheep of the following breeds, and registration will not be required: Rambouillet or French Merino type, American or Delaine Merino type, or the Spanish Merino type.

Angora goats are given liberal awards and will also receive special prizes from the American Angora Goat Breeders' Association.

Perhaps the largest number of entries will be found in the swine division, prizes for which will be awarded to boars and sows of various ages, herds, get of one sire, produce of sow, and fat barrow. The list provides prizes for the Berkshire, Poland-China, Duroc-Jersey, Essex, Small Yorkshire, Chester White, and Hampshire breeds. The Berkshire, Duroc-Jersey, and Chester White Associations offer special prizes for their respective breeds which will add considerable to the total prizes offered.

Entries in all classes will close August 14, 1913, so that the breeder should have his entries in before this week's issue is received, and it is to be hoped that he has, as the State Fair is the one place where the breeder can get in touch with buyers and has an opportunity of demonstrating the superiority of pure-bred over scrub stock.

Among those who told us that they would exhibit are: N. H. Locke, of Lockeford; W. A. Young, Lodi; John Daggs & Sons, Modesto; C. M. McFarland, Tulare; A. W. Morris & Sons, Woodland; Oak Grove Dairy Farm, Woodland; E. J. Weldon, Sacramento; D. F. Conant, Modesto; H. L. Murphy, Perkins; Ed Johnson, Turlock; A. B. Humphrey, Mayhews; M. Bassett, Hanford; J. K. Frazer, Denair; A. M. Henry, Farmington; E. C. Rand, Santa Rosa; C. B. Cunningham, Mills; J. E. Thorpe, Stockton; T. Gilkerson, Lemoore; Bishop Bros., San Ramon; Thornton S. Glide, Dixon; Howard Cattle Co., San Francisco; Henry Wheatley of Napa, and U. G. Strader of Ceres.

There are no doubt many other intending exhibitors from whom we have not heard on the subject, and whom we will gladly give notice of if they will notify us by letter.

From the above list of premiums and exhibitors it can easily be seen that the State Fair this year will surely come up to the wildest dreams of the up-to-date press agents.

A FREE MARTIN.

To the Editor: I have a Jersey cow who has just had twin calves, a heifer and a bull. The heifer was born about five minutes before the bull and seems to be the stronger. My neighbors tell me to fatten both for the butcher for they say the heifer will be barren. The mother is a young cow, as this is her second calf. Kindly inform if this is one of nature's laws or if there is a possibility of the heifer calf turning out all right?—A. S., Ontario.

The probability is that it will be better to veal the heifer than to raise her, as most heifer calves twinned with a bull are free martins, or animals of mixed sex and no good for breeding purposes or for profitable milk production. If the bull is a good animal, he probably will be all right, as this twinning does not seem to affect a bull calf, though it does the heifer. It does not always happen that the heifer is worthless for breeding, but the probability is so great that you had better have her killed and be done with it.

COUGH CURE FOR MARE.

To the Editor: Will you be so kind as to tell me what to give a mare that has a cough which I believe developed from getting some musty hay? She is very short of wind, and seems to get no better.—F. K., Woodlake.

ANSWER BY DR. E. J. CREELY.

Give Fowlers Solution of Arsenic ½ ounce twice daily. After two weeks give ¾ ounce twice daily. Dusty or musty hay aggravates the cough. All hay given should be steeped in hot water and covered over with a blanket three hours before feeding.

San Francisco Veterinary College.

M. Holdredge, of Modesto, is putting three head of pure-bred Holstein cows on official tests. This herd, known as the Cream Cup Herd, is considered one of the best Holstein herds in the State, some 20 head having been sold to A. W. Morris & Sons, of Woodland, which were half-sisters to the well

known Aralia De Kol. The owner states that during the fall and winter months considerable official testing will be done. So far this season the bull sales from his herd have been very good, one especially fine young Pontiac bull being advertised in this issue.

How to Get Better Grade Cows.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

So much has been said and written of the pure-bred cow that a different condition confronts our breeders in California now than any they have had heretofore. This condition is that the pure-bred cow has become so fashionable that every dairyman thinks he must have a registered herd of cows if he is to receive the maximum returns.

As everyone knows, the pure-bred cow is more apt to be a good producer than a grade cow, because the former has been bred for butter-fat production for a good many generations, and it should be said that the pure-bred cow is very necessary to the higher production among dairy cattle. With all of her good milking qualities, however, her male offspring is the most valuable asset of the pure-bred cow, for one good son from such a cow can increase the herd's production 50 per cent in one year's crop of calves, whereas the female can only reproduce once a year. In view of the above, then, it seems rather foolish for so much interest being taken in the cow and so little in the bull.

While talking with a Jersey breeder this point was discussed to some extent, and his views seem to be the best expression of what dairymen need most that we have heard.

Those views are substantially as follows:

"We have been breeding Jerseys for a number

Cow Sold at G. O. Hillier's Auction Sale.

of years in California and know that dairymen have a much clearer idea of the value of good stock than ever before, but we often wonder if they haven't the wrong impression of the proper way of increasing their production in the most economical fashion.

"For illustration, we have at the present time about 150 head of Jerseys, part of them being grades, and we also have a number of Jersey bulls ranging from six months to two years in age. As yet we have not built our herd up numerically as strong as we want to, so naturally do not have any pure-bred females for sale, but do occasionally sell a few head of grades.

"Last week we sold one of these grade cows for $200, that being an exceptionally good figure, but we can always get from $100 to $150 per head for them. Take, on the other hand, the young bulls we offer for about the same price as the grade cow, and in return for such an investment the buyer is assured of getting an animal of as good breeding as can be found anywhere in the country.

"Now let us see which purchase is the best business from a dairyman's standpoint. After buying the grade cow, she is taken home and put into his herd, where she will perhaps produce between 200 and 300 pounds of fat during the year, which when sold will bring in a revenue of from $65 to $100. This may seem an extra high estimate, but my grades are extra good producers, having been as carefully selected for production as my pure-breds. Besides the fat returns, this cow drops a calf worth $5 for veal, or if a heifer and kept for the future herd it is probably worth a little more; but this, too, depends upon the herd sire, for if an inferior bull has been used, the calf cannot be expected to be as good as its mother for production. By purchasing a good grade cow, then, the dairyman has spent, say, $125, and in return has increased his production from 150 pounds, the average production of a poor grade, to 250 pounds, average of the good grade, or 100 pounds, worth at last year's market prices $33. Of course, we have no intention of discouraging the idea of better bred cows, but simply wish to show the dairymen how they may obtain better stock at a great deal less expense.

"If, as we have shown, good cows are to cost $100 or more, a string of well-bred grade Jerseys would cost in normal years perhaps $2,500 or more, and if their offspring be taken into consideration, a pure-bred bull must be purchased.

"Take the other method of getting a herd built up, and the one which we believe is the right one, of taking an ordinary herd of grade cows and simply buying a pure-bred sire.

"As we have shown, this bull can now be bought as cheap in this State as a good grade female, and the stock which is being offered is as good or better than can be obtained elsewhere for more money. Taking our prices as an average, $125 will buy such a bull, which, when used on a grade herd, will increase the butter production of the heifers 50 per cent in two years' time. If one does not care to inbreed, he can, by buying a new bull every two years, increase his herd's breeding 50 per cent every two years at the small cost of the price of two bulls.

"The point we wish to bring out is simply that when a man places the same valuation on a well-bred grade cow that he does on a pure-bred bull, he has made a mistake; for the bull is fully 50 per cent of the herd, while the individual cow in a string of 25 cows is only 4 per cent.

"Before dairying in this State can get on an entirely satisfactory footing, we must have better females, and the cheapest way to get them is through the sire."

This breeder's views are no different than most others on this subject, and it might be well for dairymen to give the subject more consideration.

As a suggestion, it would be a profitable thing for all stockmen, whether they be dairymen, hog men, or other, to visit this year's State Fair and take home one or more good sires to further build up their herds. As almost every breeder goes to this Fair with considerable stock, it is the greatest market place for good stock that we have in California, and the prospective buyer who does not see the livestock exhibit before purchasing has usually lost a bet.

HOW TO KEEP DAIRY RECORDS.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Some method of keeping accounts of the expense and returns from a dairy or hog ranch is just as essential as it is to have better stock and feed good food.

How to keep such accounts in the simplest manner is what the ordinary farmer is interested in mostly, because in order to be practical it must not consume too much of his time; otherwise he is apt to neglect it.

There are a great many different ways this can be accomplished, and no doubt each one has its good features, but the following plan as outlined is one of the easiest and most accurate the writer has seen in use.

The plan as seen for the dairy records is to take a common piece of paper and rule it off with pencil into columns, one column being for the name of the cow, one for the weight of her milk on the 5th of the month, one for the 15th, and one for the 25th, also when freshened, when dried off, and when bred. This only allows of three weighings a month, but it has been found that this is often enough for practical dairying.

This sheet is nailed up in the barn the first each month and filled in from time to time by the dairyman, and at the end of the month is handed to the owner, together with a test-sheet showing what each cow's milk tested for butter-fat. From these two sheets the cow's name, amount of milk given for the month, percentage of fat it contained at the time of the tests, and the amount of fat given by each cow for the month can be ascertained.

This fat table for the month is carried on out into another column which when added to from month to month shows the amount of fat produced from one to twelve months, so that one may tell at a glance what each cow has done for each month or for the entire year.

No individual records are kept as to the quantity of feed fed per cow, but an account is kept of the approximate tonnage used each month, so that by having the two sets of data, the net profits can be figured each month if necessary.

The advantages of keeping such data are many, but the two benefits standing out most prominently are that one can tell whether one feed is more efficient than another, and also, when young heifers are to replace others in the herd, one knows which to pick out to dispose of.

A similar method is used with the hog lots by using a piece of ordinary paper and ruling it with pencil or pen as before. More columns are left on this paper, however; one for the days of the month, one for amount of skim-milk each day, one for alfalfa hay, one for cocoanut meal, barley or other concentrates fed, one for registered sows, one for grade brood sows, one for little pigs, one for registered mature sows, one for herd boars, and one for porkers.

Under the columns of feed, the amount of each is written down every day, and at the end of the month added up, which shows the total cost of feed for the month. In case any hogs are sold during the month, the amount is put down under whichever column they are classified in opposite the date sold. At the end of each month an invoice is taken, and for this reason a regular valuation is put on each class each month. For instance, pigs are figured at $1 each, grade brood sows at $10, and these prices are maintained for the entire year. By figuring in this way the total sales made and the total valuation of the stock on the ranch added to each other, minus the stock on hand the previous month, show the total revenue from the hogs.

Having the amount of increase in dollars and cents, and also having a total of the cost of feed for the months, makes it very easy to figure out the cost of raising hogs and the profits thereby derived.

These two plans may seem to be a good deal of work, but if one will take a pencil and paper and outline them as described, it will be seen to be very simple and practical.

BARREL SILAGE EXPERIMENTS.

If there are any of our readers who are still a little in the dark as to how to make good ensilage, a little experimenting will no doubt be beneficial. About the easiest and most economical way of doing this was seen at J. M. Bomberger's ranch near Modesto.

Mr. Bomberger is naturally quite an experimenter on feeds and feeding, and has been doing considerable work along that line this summer with alfalfa ensilage. Instead of doing this with his large silo, he has been using a 10-gallon crock, which has proved a very good substitute. Being so small, no definite data as a feed can be gained in this way, but the best method of filling, etc., may be carefully studied at a small expense.

If one has an ordinary vinegar barrel, the same results can be expected, and there would perhaps be enough of it to get some idea of the feeding value.

Neither of these methods would take much of one's time, and could be made at a very small cost, if any. In return, one might bring out points about ensilage-making which would be a big saving when filling the larger silo. J. C. L.

H. T. Goethe, formerly of the El Taufauer Stock Farm at St. Helena, states in a communication to this office that he has sold all of his pure-bred cattle to oberts & Lynch of Penngrove, and his pure-bred hogs to James Mee of St. Helena and T. W. Goethe of Sacramento.

Conformation of Dairy Cows.

For the benefit of those who may not know what points are considered the most important in choosing the Jersey dairy cow or bull, we give the following scales of points adopted by the American Jersey Cattle Club at its last annual meeting. By careful study of a cow's conformation and the aid of these scales, one can tell pretty well whether he is getting a good dairy cow, but the only accurate way of knowing how much fat she produces is by the use of a Babcock tester and a a pair of scales:

POINTS FOR COW.

DAIRY TEMPERAMENT AND CONSTITUTION.—Head medium size, lean; face dished; broad between eyes; horns medium size, incurving, 3. Eyes full and placid; ears medium size, fine, carried alert; muzzle broad, with wide open nostrils and muscular lips; jaw strong, 4. Neck thin, rather long, with clean throat, neatly joined to head and shoulders, 4. Body: Shoulders light, good distance through from point to point, but thin at withers; chest deep and full between and just back of forelegs, 5. Ribs amply sprung and wide apart, giving wedge shape, with deep, large abdomen, firmly held up, with strong muscular development, 10. Back straight and strong, with prominent spinal processes; loins broad and strong, 5. Rump long to tail-setting, and level from hip-bones to rump-bones, 6. Hip-bones high and wide apart, 3. Thighs flat and wide apart, giving ample room for udder, 3. Legs proportionate to size and of fine quality, well apart, with good feet, and not to weave or cross in walking, 2. Hide loose and mellow, 2. Tail thin, long, with good switch, not coarse at setting-on. 1.

MAMMARY DEVELOPMENT.—Udder large size, flexible and not fleshy, 6; broad, level or spherical, not deeply cut between teats, 4; fore udder full and well rounded, running well forward of front teats, 10; rear udder well rounded, and well out and up behind, 6. Teats of good and uniform length and size, regularly and squarely placed, 8. Milk-veins large, long, tortuous and elastic, entering large and numerous orifices, 4. Size, mature cows, 800 to 1,000 pounds, 4. General appearance, a symmetrical balancing of all the parts, and a proportion of parts to each other, depending on size of animal, with the general appearance of a high-class animal, with a capacity for food and productiveness at pail, 10. Making a total of 100 points.

POINTS FOR BULL.

Head broad, medium length; face dished; narrow between horns; horns medium in size and incurving, 5. Muzzle broad, nostrils open, eyes full and bold; entire expression one of vigor, resolution and masculinity, 5. Neck medium length, with full crest at maturity; clean at throat, 7. Body: Shoulders full and strong, good distance through from point to point, with well-defined withers; chest deep and full between and just back of forelegs, 15; barrel long, of good depth and breadth, with strong, rounded, well-sprung ribs, 15; back straight and strong, 5; rump of good length and proportion to size of body, and level from hip-bones to rump-bones, 7; loins broad and strong, hips rounded and of medium width compared with female, 7; thighs rather flat, well cut up behind, high arched flank, 3; legs proportionate to size and of fine quality, well apart, with good feet, and not to weave or cross in walking, 5. Rudimentary teats well placed, 2. Hide loose and mellow, 2. Tail thin, long, reaching the hock, with good switch, not coarse or high at setting-on, 2. Size, mature bulls, 1,200 to 1,500 pounds, 5. General appearance thoroughly masculine in character, with a harmonious blending of the parts to each other; thoroughly robust, and such an animal as in a herd of wild cattle would likely become master of the herd by the law of natural selection and survival of the fittest, 15. Making a total of 100 points.

NEED OF STRIPPING COWS.

It is universally known that it is necessary to milk a cow clean and not to leave any more milk in the udder than can be helped, unless, perhaps, a person wants to dry a cow up. The reason why complete milking is necessary is that a cow will not continue to give a good flow of milk unless she is milked clean and besides this, the richest part of the milk is lost if the strippings are not drawn, for the last drawn part of the milk is much richer than the first.

The Kansas Agricultural Experiment Station conducted some experiments with five cows to see what difference there was in the richness of the milk whether the stripping was done or not. Samples were tested for butter-fat, and the variations during a single milking are shown in a table which is appended to the report. The first milk drawn contained a very low percentage of butter-fat—only 0.2 of 1 per cent—and there was a gradual although not entirely uniform increase from the first to the last milking, the last sample being exceptionally rich in butter-fat. The importance of milking cows completely is illustrated by the results of this experiment. If the last portions of the milk had been left in the cow's udder in each of the five cases the percentages

REGISTERED POLAND-CHINAS
(Large Type.)

Royal, Orient, and Chief Price blood. 3-year-old herd boar, Young's Wonder, and fine young stock for sale.

FAIRVIEW STOCK FARM
W. A. Young, Prop., Lodi, Cal.
Will show at the State Fair.

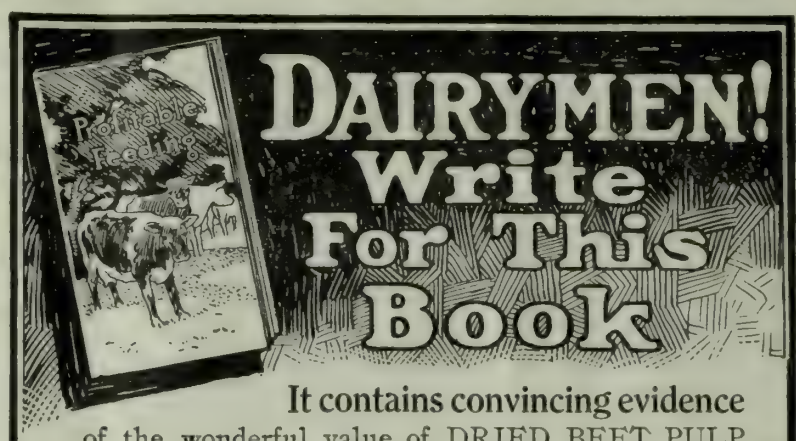
10 PEDIGREED
HOLSTEIN-FRIESIAN BULLS
2 TO 16 MONTHS OLD, FOR SALE
Handsomely marked and well shaped. Prices reasonable. Call or write.
W. W. LAMON,
Supt. Floribel Farming and Cattle Co., Hardwick, near Hanford, Cal.

PONTIAC BULL CALF
from 18-lb. dam; 5 months old. A beautiful show animal, fit to head any herd.
PRICE $125.
M. HOLDRIDGE, Modesto.

HOLSTEIN HEIFERS
3 two-year-old bred for first calf.
PENNANT DAIRY,
E. J. WELDON,
Box 962, Sacramento, Cal.

Live Stock Wanted

I am offering a practically new 1913 electric lighted and self-starter automobile in exchange for good dairy or beef cattle, or I will give a gilt-edge, second mortgage, due within a year, at 8% net per annum, payable monthly, or a good equity in city property, for stock. Am moving to the country and want good stock. If interested address
E. P. H., 927 Broadway, Room 49, Oakland, California.



It contains convincing evidence of the wonderful value of DRIED BEET PULP ——the succulent, milk-producing, vegetable food for dairy cows.

If you are feeding your cows principally alfalfa—read what H. E. Van Norman of the University of California, Agricultural Experiment Station, says:

"In the judgment of the writer, the dairy cow that has the ability to make thirty pounds of milk a day, or better, cannot eat enough alfalfa hay to enable her to do her best work, and she should be fed some form of grain or by-product concentrate low in protein to supplement the alfalfa hay eaten. Every cow must have enough feed. The feed she does eat must contain the minimum amount of protein required for her maintenance and for production of milk. An insufficient amount of feed limits production, an insufficient amount of protein limits production."

Dried Beet Pulp supplies just what alfalfa lacks—carbohydrates. Fed together, alfalfa and Dried Beet Pulp furnish a perfectly balanced ration—one that will make your cows healthy, bright-eyed, sleek-coated and produce a maximum flow of milk.

DRIED BEET PULP

Try feeding Dried Beet Pulp and you will notice an almost immediate gain of from 1 to 5 lbs. more milk per cow a day. Furthermore, you will have less sickness in the herd and practically no "off-feed" periods.

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PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three year old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

would have been reduced from 2.43 to 1.93, from 3.3 to 2.95, from 3.52 to 3.38, from 4.37 to 4.13, and from 3.46 to 3.25 respectively.

Somewhat similar experiments were recently conducted in England, the same conclusions being drawn. Of these the Farm and Home says:

It is observed that on the large milk-selling dairy farms round Newcastle it is a common practice for each milker to strip the cow before he finishes milking, so that the milking and stripping are done in one operation. At the same time a frequent practice is for the milking to be done in the ordinary way, and soon afterwards one of the more skilled milkers takes the last drawn milk, or strippings, from each cow. The less skilled milkers leave more milk for the strippings, which consequently are likely to be less rich in fat, while the more skilled milkers leave less milk for the strippings, which are therefore likely to be richer in fat. When stripping is practiced the usual object is to make sure that all the milk has been taken from the cows. If this has not been done the richest portion of the milk will have been left in the udder, and further the cows will in all likelihood gradually reduce their milk yield.

The strippings taken in this test at Offerton Hall varied in amount from a quarter to three-quarters of a pint, showing that the cows had been well milked at the ordinary milkings. Had more milk been left in the udders, the percentages of fat in the strippings would probably have been considerably less. The average percentages of fat in the strippings of each cow were 6.03 at 5 am., 6.56 at 12.30 p.m., and 5.59 at 6 p.m., but the strippings of the individual cows varied greatly in this respect.

The average percentage of fat in the milk of the whole milking was 2.94 at a.m., 6.56 at 12.30 p.m., and 5.59 at 6 p.m., Had the milkers failed to draw the strippings, assuming the average quantity to be half a pint (which was practically the case), the average percentage of fat of each milking would have been 2.46 at 5 p.m., 3.66 at 12.30 p.m., and 3.86 at 6 p.m. These prizes also show the importance of milking cows right out at each milking.

These English tests, and the American, too, show the loss of butter-fat by careless milking. They do not show how much it makes cows fall off in production, but the two losses together form a strong argument for thorough milking.

J. E. THORPE'S PURE-BREDS.

The opinion is still held by a great many people that there is no room in the pure-bred business for a man of moderate circumstances. The writer often meets men who are the exception to this opinion, but perhaps no better illustration could be cited than J. E. Thorpe, of French Camp, San Joaquin county. While he has only been breeding pure-breds for a few years and as yet has not a large herd, he has as good a foundation for a pure-bred Jersey herd as one could well wish for.

An instance of what revenue a pure-bred cow is capable of producing was called to our attention while visiting this ranch. The one we speak of is the cow Louise of Venadera who has in four years dropped four bull calves, which have been sold for breeding purposes for a total of $325. Mr. Thorpe paid $75 for her as a yearling heifer, so it can readily be seen that she has proved a profitable investment as a breeder alone. As no systematic testing has been done, it is impossible to state just how much butter-fat she has produced in the past four years, but it is safe to say she has done as well or better in this respect than most good grade cows.

Mr. Thorpe is working under some disadvantage at the present time, due to having moved to a new ranch this spring, and as it was unimproved he has had to check and seed the land and also put up new buildings. For a herd bull he has Sonny St. Hillier, sired by Mary Miss Son, 76629, and out of Golden Grand Olga, 160904.

In the calf lot of this breeder we saw two young heifers which were the best illustration perhaps of what the future of this ranch will be. These heifers were sired by Sultana's Golden Fern, whose grandsire was a half-brother to the well-known Flying Fox. Another interesting thing about the calves on this ranch is the way they are being fed. Alfalfa pasture, which most dairymen are so afraid of bloating calves, is seemingly not at all feared here, and for the simple reason that they are allowed the run of an alfalfa field at all times. Mr. Thorpe said that the only reason he could ascribe for them not bloating is that by having it in front of them all the time they do not eat so greedily, but rather eat slowly and as a result do not bloat. They are fed skim-milk in the morning before being turned out, and this may have something to do with their not bloating.

In the ranch are 40 acres, all of which is alfalfa land, but a part of it will be used for corn and other annual crops. For irrigation an electric pumping plant and reservoir have been installed.

In connection with the Jersey cattle it has also been found profitable to keep pure-bred Duroc-Jersey swine. Two herd boars are kept, one being California Volunteer and the other one of the King of Colonel strain.

Taken from the different angles, Mr. Thorpe seems to have made a very successful start in the pure-bred business and should continue to do well. That Jersey cattle come natural to him can be seen when it is known that he was raised under N. H. Locke's Jersey wing, which is surely good protection.

SHEEP.

FOR SALE—85 highly graded young Shropshire ewes; two thoroughbred rams. Perkins & Co., Perkins, Cal.

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Special Attention to Out of Town Accounts
SAFE DEPOSIT VAULTS

With the Livestock Men.

The County Fair to be held at Woodland this month seems to be "catching on," judging by the reports received from there. A. H. Brinton, who has charge of the horse show, states that C. W. Bowers, of Davis, will make a good exhibit of Clydesdale, Shire, and Percheron stallions, and it is safe to say that in a breeding center like Woodland there will be good exhibits of dairy and beef cattle, sheep and hops.

It is reported that representatives of the Los Angeles Union Stockyards are now in the San Joaquin valley making arrangements for the first shipments of stock to that company, which expects to be ready for operation by August 15th.

A great many good-sized shipments of spineless cactus have arrived at Modesto the past week to be used for propagation purposes. It should be interesting to know what the results of this new feed are in a section like Modesto where King Alfalfa now rules.

During the year ended March 31, 1912, the American Jersey Cattle Club reports that there were 25,726 head registered, and that there were 29,948 transfers issued, showing a gain of over 2,000 for each. Most of these were native-grown animals, which seems to prove that our home breeders are now in a position to supply the trade with almost any quality desired.

Much more interest is being displayed among Ayrshire breeders in doing official testing, as is shown by the last list of official records made by members of the Ayrshire Association. The average of these records for two, three, and four-year-olds and mature cows was 9,429 lbs. of milk with a test of 3.98, 374.87 lbs. of fat, and 441 lbs. of butter.

A good market for dairy cows is reported from Patterson, Stanislaus county. George A. Ingels has just received two more carloads for distribution in that district.

A. F. Guerin, Holstein breeder of Tulare, shipped during the past week a seven-months-old bull and a heifer of the De Kol family. La Rue C. Watson purchased them for the Government dairy school in the Hawaiian Islands.

Sheep-owners report that the pasture in the Sutter tule basin is very good this year and that there are about 50,000 head being pastured there this year.

Twelve head of horses owned by I. G. Zumwalt, of Colusa county, were killed during the week in accordance with an order from the county veterinarian, who stated they were affected by glanders.

George Haigh, of Santa Rosa, sold during the week 25 head of cattle for $2,000. Prices of this kind seem to indicate that cattle-raising is a profitable industry.

The new creamery at Oakdale is paying out $7,000 per month to dairymen of that section. With the added acreage recently put under irrigation, this district will produce large quantities of cream in the future.

The quarantine heretofore in force in parts of Nevada and Utah for sheep scabies was raised August 1st by B. T. Galloway of the Bureau of Animal Industry. This order affects all of Nevada and Utah except Carbon, Emery, and Grand counties, Utah.

The report of Dr. Frank Griffith, county livestock inspector of Kings county, shows that the disease among hogs near Hardwick had been checked and that a shipment of 51 head of dairy cows consigned to Patterson had been inspected.

A big run of very common cattle at the Portland Union Stockyards during the past week had a tendency to lower prices, the different quotations being $8.25 to $8.50 for best steers; dehorned cows and heifers, $6.50 to $6.75, and horned stuff at $6.25 to $6.40, ranging on down to as low as $5; bull, $4 to $5.50, and veal calves $8.75 to $9. Hogs were weaker with bulk of sales around $9.10 and $9.25. Sheep receipts were light and prices about the same as last week.

During the past 11 months the wool exports for New Zealand and Australia decreased 249,754 bales, according to data compiled by Dalgety & Co., Ltd. This report does not show the total production, but rather the amount shipped to foreign countries.

W. M. Carruthers reports that he shipped during the past week a good-sized shipment of Poland-China and Berkshire hogs, Holstein cattle, and Cotswold sheep to Callao, Peru. The Berkshires were purchased from the Oak Grove Dairy Farm at Woodland and W.

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A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

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GROCERIES, tents, engines, pumps, furniture, paint, wagons, harness, etc., at Factory prices.

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Sacramento, California

September 13-20, 1913

WILL BE THE GREATEST SHOW OF HIGH BRED LIVE STOCK EVER EXHIBITED ON THE PACIFIC COAST

Premium List has been enlarged so as to take care of a larger number of classes, and in some instances materially increased.

Especial attention is called to the fact that a liberal increase has been made in classifications and premiums on dairy products.

The Poultry and Pigeon Department has been revised and an increase has been made in premiums. In Pigeon Department no first premium will be less than $1.00; no second premium less than 50c.

A classification has been made for market culinary animals, providing premiums for rabbits and hares.

There has also been established boys' judging classes, and the sum of $400.00 set aside for premiums for boys who prove the best judges of live stock.

Premiums are provided for the best displays of Indian corn and spineless cactus.

Premium list is now being prepared. Send in your name now, to be placed on the mailing list.

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"Hillcrest Lad"—First Prize Ram at State Fair, 1911.

Offers for Season of 1913 an exceptionally fine lot of Pure-bred and Registered Shropshire and Merino Rams, yearlings and two-year-olds.

1st Prize Ram Lamb, Omaha, 1911

SAN RAMON SHROPSHIRE FLOCK

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.

CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.

OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.

INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS.,
San Ramon, Contra Costa County.

H. Hoard of Snider, and the Poland-Chinas from A. M. Henry of Farmington.

Several Government inspectors have been at work around Liveoak, Butte county, inspecting dairy barns and equipment.

The 1300-acre Ord alfalfa ranch near Gridley has been leased by a company of dairymen and creamerymen who will improve the property and continue it as a dairy.

E. Lovell, representative of a San Francisco wholesale house, visited Fresno during the week where he secured a number of orders for Australian meats. The plan is to make Fresno the distributing center for the valley after September.

The sale of pure-bred Holsteins held at the McCord ranch near Hanford last week brought prices ranging from $60 to $125 for yearling calves and $40 to $200 for mature cows.

Renewed interest in dairying is expected to follow the opening of a new creamery near Bakersfield by H. E. Kinkade. The output is all contracted for in Bakersfield, it being at the start 500 pounds per day.

Some stock poisoning is reported on the west side of the San Joaquin valley, caused by the drouth.

Feeding conditions in the mountains are said to be not very good, and as a consequence large numbers of sheep are being brought down into Amador and Calaveras counties.

J. E. Thorpe, of French Camp, reports that his three-year-old heifer, Modella of Venadera, died during the past week.

LIABILITY FOR DAMAGE BY BULL.

To the Editor: A neighbor's bull broke through the fence and got at my bull while he was tied up, injuring him so seriously that he is beyond recovery. This neighbor has been very careless about his bull, and I have talked with him many times, telling him that he must take better care of the bull. He didn't even have a ring in his nose when he came through the fence at my bull. Now, I should like to have you look into the law in regard to the control of bulls and see whether or not the State law requires one to keep his bulls rung and also keep them from damaging neighbors and see what the penalty for such offense is. T. J. G.

Lemoore.

ANSWER BY DERNHAM & KING, ATTORNEYS.

There is no penal law of this State requiring "one to keep his bulls rung," though "every person in charge of any bull * * * who permits such animal to be turned out or run at large in any county, is guilty of a misdemeanor and punishable by a fine of not less than five nor more than twenty dollars, or by imprisonment in the county jail not less than thirty days, or by both such fine and imprisonment."

The civil responsibility, however, of the owner of a bull in such cases is unquestioned. Every wrongful entry made by an animal upon lands in the occupation or possession of their owner renders the owner of the animal liable in trespass for damages resulting. In cases where the land entered is "planted to growing crops, vines, fruit trees, or vegetables and is at the time entirely enclosed by a substantial fence or other enclosure" an attachment may be levied upon the trespassing animal, or it may be sold on execution to satisfy the judgment for such trespass, any exemption law notwithstanding.

Moreover, when an animal, such as a bull, is vicious, and the owner has knowledge of its viciousness, he keeps the animal absolutely at his peril, and is responsible to the full extent for any injuries caused by it to persons or to property, including other animals, and this is irrespective of any question of negligence.

On the other hand, when the owner of an animal has been negligent, that is to say has failed to exercise ordinary and reasonable care, he is liable for all damage in direct consequence of his negligence, irrespective of whether the animal was or was not vicious; and when other animals have been wrongfully injured and the injury was committed "willfully or by gross negligence, in disregard of humanity, exemplary damages may be given"; that is to say, additional damages for the sake of example and by way of punishment.

A special provision of the law of this State renders the owner of possessor of any animal that shall "kill, worry or wound any sheep, angora goat, or cashmere goat, or poultry" liable in damages to the owner of the same, irrespective of vicious tendencies, or of knowledge of them on the part of its owner, and irrespective of negligence. In such cases any person finding such animal so engaged and not on the premises of its owner or possessor may kill it. In addition to the State laws on this subject special regulations and ordinances are in force in most counties.

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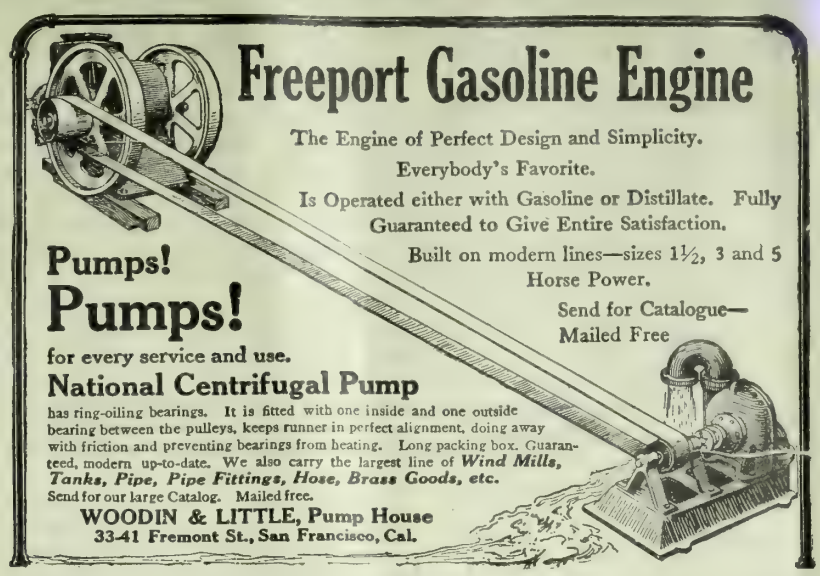

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Ways to Preserve Fence Posts.

Fence posts may decay in a very short time, depending more or less on the kind of wood, the extent of seasoning before setting in the ground, the nature of soil and climate and the kind of treatment that the posts have been subjected to in order to prevent decay. In California we are perhaps better off than in the East both in regard to the kind of wood available and to a still greater extent on the climate. Nevertheless there is an immense amount to be saved by treating posts properly to preserve them.

The University of Minnesota has just issued a popular bulletin which gives some profitable pointers on this subject. In regard to the real cost of fence posts, treated and untreated, they say as follows:

The annual not the initial, cost is the true basis. It can be estimated properly only by including the cost of maintenance during a given period of years as well as the first cost. Thus it costs about 12 cents to set a post and put on two or three wires. If we consider the average life of the one of the quickly decaying woods named above as four years, and its original cost 6 cents, the total cost of setting and renewals for twenty years will be 90 cents, or 4.5 cents per year. On the other hand, a cedar post costing 20 cents would last ten years. The total cost in twenty years is 64 cents, or 3.2 cost per year. If a 6-cent post of inferior wood could be treated for 15 cents so that it would last the entire twenty years, the total cost for the period would be 35 cents, or 1.65 cents per year.

The best treatment for California posts is probably crude oil, though creosote is most recommended for Minnesota conditions. Other methods of preparation are also profitable, most of which are discussed as follows:

Charring is probably one of the oldest and most efficient of the old-time processes. It was found that well-charred timbers resisted decay much longer than those not so treated. There is no question of the benefit. The application of the fire dries the outer layer of the wood very effectually. This in itself is a big step toward preservation. In addition the fire burns up the sugar that the fungi feed on and transforms the outer layers of the wood into almost pure carbon, on which most of the fungi cannot subsist. Hence, as long as this layer of carbon remains unbroken, the timber is almost perfectly protected. The heat of the fire opens up any cracks that may have been starting and their inner surfaces are charred. Large checks are unlikely to open after this treatment.

At the Wyoming Experiment Station a variation of the charring method was tried, with the result that posts so treated were entirely sound after being set seventeen years, and were good for thirteen years more, while untreated posts had rotted off after being set twelve or fourteen years. The lower ends of the posts, to six inches above the ground line, were dipped in crude petroleum, and the oil was burned off.

The objections to the charring process are: the time required, the difficulty of obtaining a thorough and even charring, and the danger of burning the posts so deeply as to impair their strength. Such posts, moreover, should be used only where there is not much danger of the carbon being battered off, for when this occurs the inside of the post is susceptible to rot.

Whitewash is often applied to prevent rot. It also forms a protective coating to keep out the fungus spores. It is effective as long as it lasts, but is not durable. Most whitewash is soluble in water, and is soon washed away. No trace of the protective coating or the antiseptic qualities of the lime remains. It is questionable whether the results warrant the trouble and expense; certainly not when the timber is green, for there is enough moisture inside to support dry rot.

Paint is used in the same way as whitewash and has the same effect. It is also open to the same objections when placed in contact with the ground, where the continued moisture soon softens it. As a protection against the weather it is more durable.

Coal tar, when applied with a brush or by dipping, has about the same effect as the same kind of treatment with creosote and is about as effective. Possibly it will last a little longer.

The heavy oils of coal tar and petroleum are not subject to the objections made to mineral salts, which readily dissolve in water. Most of these oils possess the antiseptic qualities of the salts; and being heavier than water and insoluble in it, are little effected by it. These heavy oils, as we have previously stated, are probably the best things to use for California, where oil will be much cheaper than in Minnesota.

There also remains the possibility of using other material than wood for posts. Of this, the bulletin says:

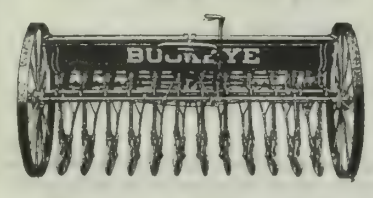
The increasing cost of the durable wooden posts has called forth many substitutes, of which iron and cement have been tried most extensively. There are serious objections to both of them. They are heavy, and high freight charges make it impossible to ship them any distance. Both offer difficulties in attaching wires.

Iron, in spite of its great tendency to rust, even when painted, lasts longer than wood. When set in cement and kept well painted it will last thirty or forty years, but the cost of setting, painting and shipping, added to the original cost of about 90 cents puts the iron "out of the running" for practical use, in comparison with cedar or a "treated" post of some inferior wood.

The cement post can be made on the ground for 25 or 30 cents, if the proper kind of sand is available. It cannot be used if there is any alkali in the soil to cause the cement to crumble. Its economical use is strictly limited by soil conditions.

The fact of alkali injury is worth noting in parts of California, though cement is very largely an excellent possibility.

THE "BUCKEYE"



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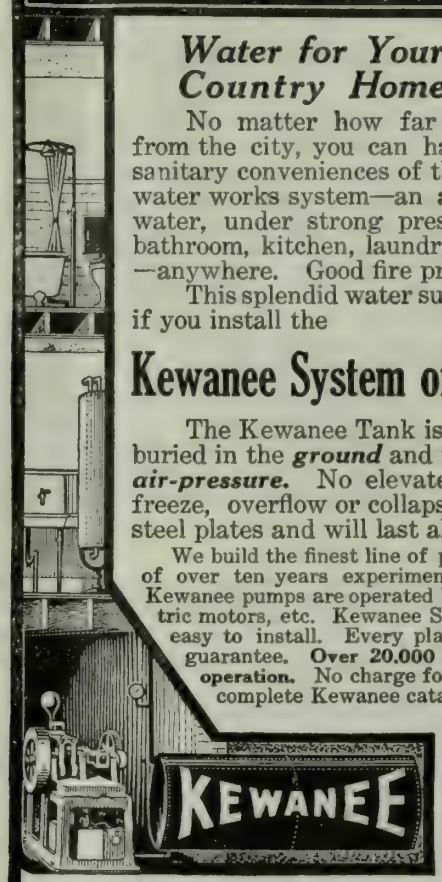

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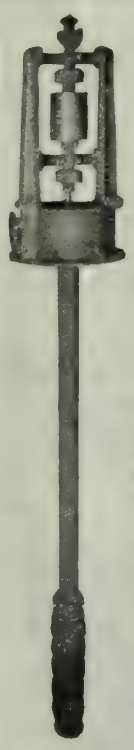

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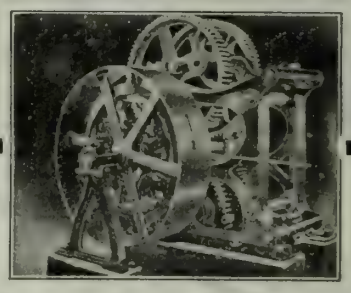

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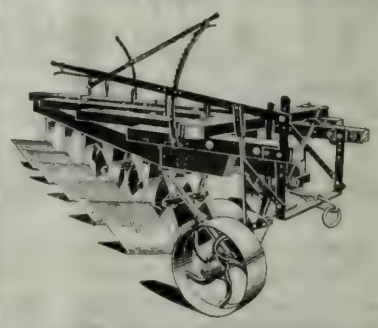

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Stockton, Cal.

Poultry Pointers From Everywhere.

[Written for the PACIFIC RURAL PRESS by MRS. SUSAN SWAYSGOOD.]

Since writing last week's paper, some more information has come to hand about the egg laying contest in Missouri. Mr. Quisenbury says, "For the first time in the egg laying contests that have been held at Mountain Grove, Mo., Buff Orpingtons do not figure among the leaders. This is no doubt owing to the extremely hot weather during the month of May. Buff Orpingtons are in their prime in cold or cool weather and will show proper form before the contest closes."

The report in part is as follows. "The American breeders have at least one thing to be proud of in this contest. A Buff Wyandotte pullet from Vermont now leads all other hens with 167 eggs to her credit for the six months and a half, or a total of 197 days. An English White Leghorn pen has held first place from the beginning of the contest. This English pen holds the pen record with a total of 1,338 eggs for this period. The pen has also laid about one hundred soft shelled eggs, which, if they could have been credited with would have put them far in the lead. May was the hottest month in ten years experience at this place. We lost two hens as a result of the heat, and this hot, dry weather is affecting our egg record."

But with all the heat, and we all know that heat does effect the large breeds, more than the light active breeds, still there are some of the large breeds in the lead for May. One pen of Black Langshans made a record of 1,095, a pen of White Wyandottes 1,044, a pen of White Orpingtons 1,095, a pen of Barred Rocks totalled up 1,041.

Mr. Quisenbury states that, "while last year's record was considered good, there are several individual records that beat 'Lady Show You.' This hen had laid 150 eggs by the last day of May last year. The highest records this year are Buff Wyandotte 167, S. C. White Leghorn 166, Buff Wyandotte 164, Black Langshan 154, S. C. White Leghorn 154, White Wyandotte 148, S. R. C. White Leghorn 150, S. C. White Leghorn 153, Buff Wyandotte 144, S. C. White Leghorn 144.

In fifteen days less time and with much hotter weather to contend with three hens have exceeded the last year's record.

From this we must agree that things are improving. Of course most all of these records for White Leghorns belong to the English pen, but we need not let that worry us at all, the only thing to do is to study out the reason for this high record.

The Missouri State Poultry Experiment Station has just published a circular which reads as follows, "Swat the Rooster". Swat the rooster should be the cry of every poultryman for the month of June. The circular claims that owing to the fact that the roosters are left in the yards during the hot weather that one out of every five eggs is bad, and eastern buyers only pay a price according to the loss. So it is the producer that looses after all.

Now what is true for Missouri will apply to this or any other State in summer time. From a Kansas City report an instance is taken which shows how eggs will detiorate in a short time.

"A reliable firm had been receiving shipments from a poultryman for more than a year. Business relations between them had been mutually profitable and pleasant. On Monday a shipment was received from Mr. Regular Shipper and when the inspection card was turned in it was found the eggs were in very bad condition, one case showing only twelve dozen of good eggs. When the dealer remitted for these eggs a long distance telephone call immediately resulted. The shipper could not understand why his eggs showed up so bad. He had gathered eggs regularly and shipped often, in fact, had given them the best of care. Investigation proved that he was not to blame at all, but the express agent had left the shipment of eggs standing on the depot platform nearly the entire day, Saturday, and when the eggs were candled on Monday, practically all the eggs showed blood rings, or other signs of decay."

Now if the male birds had been taken out of the yards after the breeding season was over the blood rings would never have developed, though the eggs would not have been strictly first class.

But as we see from the above, and from our own experiences the fault of the loss of quality in eggs is not always the fault of the poultryman, but he always has to bear the loss; no mistake about that end of the deal. That being so, it is every man's right to register a kick whenever he sees anything being done that injures the eggs in any way whatever.

I have in mind an express office that I used to ship from and as they had no outside building to put empty egg cases in, the agent set them out in an alleyway for either rain or sun to beat down on them. Of course when it rained the fillers were wet and perhaps moldy before we got to town, so one day I made a kick to the agent and told him if something was not done soon I was going to write to headquarters and see about it. "Well," the agent said, "you are the only one that has said a word." I said, "That shows the others are fools or cowards to let themselves be imposed on by an express company that charges for what they ought to do and then don't do it." Anyway we got a shed put up so it was worth while being the only crank in the community.

HELPING THE MOLT.—A great many hens will be in the molt this month, and it is well to remember that the older they are the more nourishment they need. It is poor policy to run young and old together during the molting season, because the younger ones do not need near so much care. I save all my table scraps, little pieces of meat or any greasy food that happens to be on hand for the old hens. Of course they all need some form of animal food, to make feathers, I have found that sour milk is one of the best things out for molting hens, and also to start young pullets to lay. And milk, no matter how much is fed, will not cause liver trouble, so it is better than meat in any form. Next to milk I like cracklings, from the local butcher and a little flax meal (too much is laxative) sunflower seeds and bone are all helpful when new feathers are being made.

Keep the old feathers raked up and either carry them out on the land or burn them, if they lie in the yards until decomposition sets in the hens suffer from the foul smell. This is also a good time to get rid of any lice the hens may have, don't let them have to feed a lot of parasites off what is given for their own sustenance.

A little epsome salts in the mash once in awhile and a little sulphur just once now and then helps keep the blood right. Hens that are in good health to commence with soon get through with the molt and back to business, it should be our aim to keep them in health all the time, plenty of green feed fills the bill and it is cheaper than grain bills.

PRIZES FOR 1915.—The Specialty clubs are just beginning to get ready to boost for the Panama Pacific International Exposition in 1915. The first announcement comes from the Black Orpington Club. The secretary, Mr. Ora Overholser, Eaton, Ohio, says in the American Poultry World, "The American Black Orpington Club has decided to offer at the Panama Pacific International Exposition World's poultry show at San Francisco 1915, the finest cup ever placed on poultry, to be known as the 'World's Cup,' value $100. Several $25 cups will also be offered and many cash prizes besides." It is now up to the Black Orpington breeders of California to keep that cup in the State, for it will be an everlasting disgrace to let it go back East. Breeders of the Blacks get a move on you and send to the secretary for full information.

We have some grand Blacks in California, but you never want to rest content, because it is just likely that somebody else has some just as good, or a little bit better, so try to improve.

PETALUMA'S SIX DAY RECORD.—In the American Poultry World, I find a record of Petaluma's egg output for the six days January 2 to 7 inclusive, as 279,980 dozen shipped from Petaluma. California does things on a big scale and the Eastern folks are just finding out that we are on the map. After 1915 thousands more will find out we are on the map, and they will want to stay here too, all those that can afford to stay at least.

A letter from Mrs. E. M. L., Hayward, asking for information on feeding molting hens and how long to give condition powder has been received.

As the feeding question has been gone into in this paper, we will just add to what has been said by saying we have very little faith in condition powders at all. Black antimony figures very largely in all condition powders and this simply means crude sulphur, better give a little of the purified sulphur and a little straight flaxseed meal.

[Black antimony and sulphur are different and distinct substances, though there effect as a medicine may be very similar for all we know.—EDITOR.]

But whatever is given don't overdo, just enough to act as a slight alterative. Everything a hen needs is found in grain and green feed except a little animal food to help out with the new feathers. If you can get green bone from the butcher you are in luck and your hens will need no condition powders.

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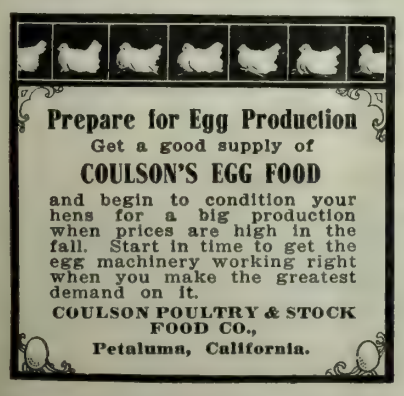

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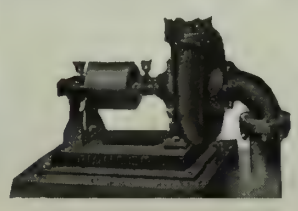
We still have a few of our choice Barred Rocks, Buff and White Orpingtons, and S. C. Rhode Island Reds left.

Write at once if you want some of these rare bargains.

Hopland Stock Farm, Hopland, Cal.
POULTRY DEPARTMENT



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The Home Circle.

Love and the Princess.

They hurried swiftly down the steep hill which led from the grim gray walls of the old castle and went winding in and out like a great brown snake through the green meadows, and so over the mountains, behind which lay the fairyland they had so often dreamed of and talked about.

At last, by the side of a rippling brook, they came to a halt. The girl flung herself down among the long grass and lay idly looking up at the blue sky, and from the sky to her companion.

He was busy laying a white handkerchief upon the grass. Languidly content, she watched him, as from his capacious pockets he took a thin, round cake and a few rosy-cheeked apples. As he placed them on the improvised cloth he raised his head and waved his hand toward the feast.

"Oh, Karl——"

"'Twas all I could get, and lucky was I to manage even as much."

"Karl, you are wonderful!" He smiled at her enthusiasm, and breaking off a large portion of the cake, handed it to her.

For some seconds they ate steadily, then the girl sprang up.

"Karl—Rudolf, where is he?"

"Somewhere——" He pointed to the direction whence they had come. "Studying the countryside."

"And the Fraulein—he will be angry—and your father, Karl?"

"Um!" His mouth was full, but politeness called for a reply of some sort.

"He will beat you." Her face was grave and she laid a tiny hand protectingly upon his arm.

"No, he will not dare. I——"

"What would you do?"

"I would run away."

"From the castle—the roses—and—from me?" Her voice was tremulous, and the ready tears twinkled in her eyes.

"Even so. From the castle, the roses, and from—you." He bit deliberately into another apple. "And from you," he repeated, a certain ring of defiance in his voice.

"Why? Because your father beat you?"

"No. I care not for his beatings; but a man must see the world."

"And a woman——"

He looked at her, and flinging back his head, laughed.

"A woman? Ah! she must stay at home."

"And wait?"

"Even so."

"But suppose the man does not return?" "Then she must hope that he will—be faithful and still wait."

"'Tis hard on the woman."

"Ah!"

For a few moments there was silence. He continued to munch apples, while she cautiously removed the tears that had rolled down her cheek.

Away in the distance a bugle rang shrilly out in notes of quick alarm; but neither the boy nor girl heeded it.

"Karl," she leaned forward eagerly, "if they beat you——"

"Bah! They will not beat me. I am 19—a man."

"But if they do. You will run away?"

"Have I not said so?"

"What will you do?"

"I shall be a soldier." His eyes sparkled at the thought. "And build a kingdom."

"For me?" she questioned eagerly. The boy looked at her, then swiftly turned away his head, lest she should see the dull red surging up under his swarthy skin.

"Perhaps. Who knows?" he muttered; then, springing to his feet, held out his hand. "Come."

Obediently she rose and followed him, though she did not take his hand. At last, by the side of a wooden bridge that spanned the brook, they paused.

"But you will come back?" she asked, a note of entreaty in her voice. The boy started at the sound.

"When?"

"When you are a great soldier. When you have built the kingdom—for me."

Her face was very close to his, and as he looked into her eyes the color mounted to his cheeks once more; but he did not turn away again; instead, he took her hand.

"Yes. I will come back—when—I have built the kingdom—for you."

She smiled happily. True, if he went, the days would be very long without his voice, and the touch of his hand, but he would return, for had he not said so?

"See," he cried abruptly. "There are roses on the other side. Let us gather some."

At the end of the bridge he paused to help her down the rickety steps. Then, suddenly and without more warning than the breaking of a twig would make, the rotten planks gave way and she fell backward into the stream.

In a trice he had sprung in after her, but the water was not deep, and even as he sprang she rose and made to scramble out; but he seized her, and lifting her high in his strong arms, carried her to the bank.

She had shut her eyes when she felt his arms around her; now she opened them and looked at him.

"You a soldier! Bah! You are white—you are trembling. A soldier—you!"

She closed her eyes again. He took no notice of her words, even if he heard them. The sight of her closed eyes filled him with a nameless dread. Should he run to the brook, and geting water in his hat, dash it in her face, or should he call for help?

Then another thought chased away his first alarm. How beautiful she looked as she lay there in his arms! Her soaking clothes clinging tightly to her slender figure. He hesitated; then, as her eyes still remained closed, he bent his head and pressed his lips to hers. Immediately her eyes opened, and she smiled at him; then, slipping from his arms, she clung to him in the first joy of awakening womanhood.

"I love you! O God, how I love you!" He scarcely breathed the words.

"And I—you Karl!" Winding her arms tighter round his neck, she dragged him down until his lips met hers again.

In their newly found joy, neither heard the crackling of the bushes behind them; but as he raised his head a man, wearing the uniform of the Imperial Guard, strode toward them.

At the sight that met his eyes, he paused, dumbfounded; then his hand went mechanically to the salute.

"Highness," he stammered, "the castle is alarmed—they are out searching for you; they——" He stopped, and glared savagely at the boy.

"Tell them I am safe. Quite safe. Go," she commanded. Turning to the boy, she held out her hand. "Remember."

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Half way up the steep hill which led toward the gray castle, on the summit of which the standard fluttered, she paused and looked backward to where the roses grew. The boy stood bare-headed, where she had said farewell to him, his face toward her. She waved her hand; he answered, and turning his back upon the hill, trudged on toward the purple mountains in the distance.

* * * * * *

Once more, after many years, they faced each other; and once more he had come to say farewell. Words sprang to his lips, but remained unspoken, for though the orders that glittered on his breast told of his high rank, he was only a soldier; she, a princess.

"Tonight you go to Paris, is it not so?"

"Tonight, yes. Highness."

"And there you will see Rudolph—dear Rudolph and his wife. Happy man, happy wife," she sighed softly, looking at him through half-shut eyes. "Do you remember that day—the day before you went away? We escaped from this for a little while and went picnicking—Rudolph, you, and I. While the guards scoured the countryside, we hid among the rose trees. Do you remember?"

He remembered only too well, and the memory made him wince. The Princess noticed it and smiled.

For a moment among the roses by the silver brook, rank had been forgotten; but soon, very soon, duty had stepped in and closed the door upon the secret they had whispered.

"So you leave us again?" Looking sharply at him, she noticed the gray hairs that tinged the sleek, black head, and the great scar that showed white upon his forehead. As she looked, she remembered one occasion when it had stood out red against the angry pallor of his face. It was that time when he faced her rebellious people alone—one man against a thousand—and had struck down the man who sought to rob her of her throne.

"The empire is tranquil now." She shivered slightly as she spoke. "Had it been different, would you have gone?"

"No. I would have remained."

"Have you thought well of it? Your fame, your power; are they nothing that you cast them aside so willingly—you, who are still so young? You told me once—that afternoon among the roses—of another empire you were going to build. Have you built it, or have you failed?"

He raised his head, and for a moment looked into her eyes.

"I have failed."

"Why? You do not often fail. Will you not try again?"

"No, I shall never try again."

"But—why not?"

The Princess spoke sharply, though her eyes smiled at him.

"It was a mistake. The empire I meant was but a dream of phantasy. Even had it been real, I could not have built it alone."

Again the Princess smiled.

"And so—you go; really go, tonight?"

"With your permission, Highness, yes."

"Or without it?"

"Yes."

"Suppose I—my country should need you——?"

"I would return. You would only have to send some token, and I should return."

Again there was silence. He noticed the soft curves of her figure, and the red roses that she wore; and, remembering, bit his lip. How beautiful, how good she was. It was strange she had never married.

The Princess awoke from her reverie, and turned to him again.

"Then it is g—au revoir?" she said.

"Highness, it is—goodby."

He bent and kissed the outstretched hand, then, regardless of all etiquette, swung on his heel and left the room.

The Princess rose and listened, one hand pressed against her breast, crushing the roses that nestled there. Through the closed doors she could hear the "click-click" of his spurs as he walked down the paved corridor. Somehow his step was not so firm as usual, and, noting it, the smile deepened on her face. On the table, by her side, lay the insignia of his office, and for a second her fingers touched it as though carrying a caress.

Still smiling, she crossed the room to an old escritoire. Sitting at it, she took a sheet of dainty paper, and on it wrote one line; then, taking a ring from her finger, she placed both in an envelope, while, unnoticed, a petal fell from the roses at her breast and rested with the ring.

* * * * * *

Outside the trumpets called, and the jingle of accoutrements was carried by the summer breeze into the darkening room. Night was closing in; but the woman's smile still played lovingly in the Imperial eyes, as she sat on, amid the purple shadows—waiting for the messenger's return.

Lying in Face of Providence.

An old colored woman on the banks of the James river in Virginia was afflicted with ague and rheumatism. When her physician commanded her to swallow several large quinine capsules, she obeyed, but the operation frightened her nearly to death. After the doctor had left she lay upon the bed and groaned aloud.

Her daughter, moved to compassion, finally took down the old woman's clay pipe from the shelf, filled it with tobacco and carried it to her in one hand, while in the other she held a red-hot coal with a pair of tongs.

"Hyuh, ma," she said. "Light up yo' pipe an' ease yohse'f wid a little smoke."

"Lawdy!" cried the old mammy. "Don't bring none ob dem live coals so close to me! Don't yo' know I jes' done swallowed a lot ob cartridges?"—The Popular Magazine.

Enameling the Bath.

Do not attempt the re-enameling of a bath until the surface has been properly prepared beforehand. The high-water mark left behind by the soapsuds must be removed by scouring with a fairly stiff, close hair brush and strong soda water. Rinse, and when dry fine the surface down with sandpaper, especially those parts disfigured by yellowing. When quite smooth and all dust is removed, put on a coat of good oil paint. The final coat of white enamel must not be laid on until the paint is quite hard. When finished, allow a few days to elapse before using the bath to make sure that the enamel is set quite hard.

Murphy—What's that in your pocket?

Pat (in a whisper)—Dynamite. I'm waiting for Casey. Every time he meets me he slaps me on the chest and breaks me pipe! Next time he does it he'll blow his hands off!—Pearson's Weekly.

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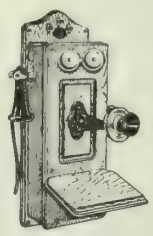

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THE MARKETS.

San Francisco, Aug. 13, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Wheat has gained a little more strength, in response to a revival in Eastern and Northern markets, and all grades have been marked up 2½c above last quotations. There is no great activity locally, however.

California Club, ctl	$1.52½@1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½@1.55
Northern Bluestem	1.67½@1.70
Northern Red	1.65 @1.67½

BARLEY.

It is reported that there will be very little barley shipped out this season, but brewing and shipping grades find some demand. Feed is moving farily well, with increasing offerings, and nothing can now be sold as high as $1.30.

Brewing and Shipping	$1.35 @1.37½
Choice Feed, per ctl	1.25 @1.27½
Common Feed	Nominal

OATS.

Business is very quiet in this line, as current trade requirements are fairly well supplied, and there are no large offerings in the local market. Values stand as before.

Red Feed	**$1.65 @1.85**
Seed	**Nominal**
Gray	**Nominal**
White	**1.55 @1.60**

CORN.

Reports of damage to the crop in the Middle West are still coming in, accompanied by a continued advance at Eastern market centers, and local prices have advanced in sympathy, as there is no large supply here.

California Yellow	$1.75 @1.80
Eastern Yellow	1.75 @1.80
Eastern White	**Nominal**

RYE.

There is no demand of any importance for this grain, and the light supplies available are steadily held at the former figures.

Rye, per ctl	**$1.45 @1.50**

BEANS.

A little easier feeling has appeared this week in some lines, somewhat lower prices being quoted for both large and small whites, as well as limas. Consuming requirements appear to be fairly well supplied for the present, and buyers are holding off until the new season's output is better known, keeping the market comparatively quiet. Limas are reported firm in the South, and no material change in prices is expected in the near future. The blackeye harvest is reported under way around Anaheim, where the crop is turning out fairly well.

Bayos, per ctl	**$3.15 @3.25**
Blackeyes	**3.15 @3.35**
Cranberry Beans	**4.70 @5.00**
Horse Beans	**1.90 @2.15**
Small Whites	5.25 @5.50
Large Whites	4.25 @4.50
Limas	5.40 @5.50
Pea	**Nominal**
Pink	**2.75 @3.00**
Red Kidneys	**3.40 @3.60**
Mexican Red	**3.75 @3.80**

SEEDS.

The local supply of broomcorn seed is about cleaned up, and there is not enough offered to establish any definite values. Alfalfa is also pretty well cleaned up on the spot, but new stock is expected in the market before long, and a little is still offered at the old figures. Other lines remain as before.

Alfalfa	**12½@ 14c**
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	**3¾c**
Canary	**6 @ 6½c**
Hemp	**3 c**
Millet	**2½@ 2¾c**
Timothy	**Nominal**
Yellow Mustard	**Nominal**

FLOUR.

Prices remain stationary as for some months past, and the market shows very little feature.

Cal. Family Extras	**$5.60 @6.00**
Bakers' Extras	**4.60 @5.20**
Superfine	**3.90 @4.10**
Oregon and Washington	**4.90**

Hay and Feedstuffs.

HAY.

Hay continues to come into the local market in very large quantities, the arrivals of the last two weeks being by far the heaviest of the present season. While there is a very fair buying movement in the local trade, many consumers still look for lower prices, and there is considerable difficulty in disposing of this large quantity as it comes in. Quotations stand about as before, but prices are not very well maintained. In some parts of the country there is very little hay on hand, but in places where little has been sold, the growers are much more anxious to sell than formerly, and make some concessions in prices, but dealers show no great anxiety to buy at the moment. Alfalfa continues in good demand and most growers are asking prices above parity with the local market.

No. 1 Wheat, or Wheat and Oat	**$15.50@16.50**
do No. 2	14.00@15.50
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 95c

FEEDSTUFFS.

With better supplies of raw material, alfalfa meal is going down, being 50c per ton lower this week. Other lines of feed are steady as before with a moderate demand.

Alfalfa Meal, per ton	$18.50@19.50
Bran, per ton	26.00@27.00
Oilcake Meal	**32.50@33.00**
Cocoanut Cake or Meal	28.00@29.00
Cracked Corn	40.00@41.00
Middlings	**34.00@36.00**
Rolled Barley	27.00@28.00
Rolled Oats	33.00@34.00
Shorts	**27.00@28.00**

Garden Truck.

VEGETABLES.

Onions remain steady at the old figures, with a moderate but steady shipping business and no great accumulation on the local market. Supplies of garlic have been considerably reduced, and present offerings are closely held at a sharp advance. Tomatoes are coming in at about the same rate as last week, and nothing is offered below 75c, while fancy stock readily brings the top quotation. With the bay crop ripening rapidly, however, the tendency is downward. Green corn shows quite a wide range, some fancy lots bringing the top figure, while ordinary stock is quite plentiful, and some off-grade stock can be picked up at concessions. All lines of beans and peas, as well as green peppers, are higher, while cucumbers and okra are offered freely at lower prices. Summer squash and eggplant stand about as before, with ample supplies, though some fancy lots of eggplant are held at an advance.

Onions: New Yellow, River, ctl.	85c@$1.25
Garlic, per lb	3½@ 5c
Cucumbers, per box	20@ 35c
Green Peppers, box	50@ 75c
Carrots, per sack	75@ 90c
Cauliflower, per doz	40@ 60c
Green Peas, lb	4@ 5c
String Beans, lb	4@ 6c
Summer Squash, lug box	35@ 50c
Green Corn, choice, sack	1.00@ 2.25
Okra, box	40@ 60c
Tomatoes, box	75c@ 1.25
Eggplant, box	40@ 85c
Lima Beans, lb	5@ 8c

POTATOES.

River stock is in ample supply for the local market, but with some outside demand for the better offerings, values have gone up a little. Arrivals of sweet potatoes are still increasing, bringing a further drop in prices.

New River Whites	95c@$1.25
Sweet Potatoes, per lb	2¾@ 3c

Dairy Produce.

POULTRY.

Eastern hens are still coming in quite freely, and while prices for large hens stand about as before, small local stock is lower, and moves rather slowly. Good young chickens, however, are in very moderate supply, and large broilers are higher. Turkeys are moving only in a limited way, but good live birds will bring up to 22 cents.

Large Broilers, per lb	24 @25 c
Small Broilers, per lb	24 @25 c
Fryers, per lb	24 @25 c
Hens, extra, per lb	16 @17 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	24 @25 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.75@ 2.25
Ducks, doz.	4.50@ 6.00
Turkeys, live	20 @22 c

BUTTER.

Extras remain firm at the last quotation, and the only change of the week is a half-cent advance in firsts. Arrivals are running rather light, and most of the supplies are coming to a few dealers.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	33	33	33	33	33	33
Prime Firsts	30	30	30	30	30	30
Firsts	28½	29	29	29	29	29

EGGS.

The market has fluctuated somewhat this week, with a general tendency downward, though no great decline is likely. This condition is due to increased offerings of Eastern and storage stock, which is taken in considerable quantities with fresh eggs at present prices.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	33	32	31½	32	31	30½
Firsts	27	27	27	27	27	27
Selected Pullets	26½	26	26	26	25½	25½

CHEESE.

Y. A.'s and Monterey cheese remain steady at the old level, while fancy flats have lost part of last week's advance, though there is a rather firm feeling at present quotations.

Fancy California Flats, per lb	16½c
New Young Americas, fancy	18c
Monterey or Jack Cheese	14@15c

Deciduous Fruit.

Arrivals continue heavy in most lines, and considerable stock is carried over from day to day, witn lower prices in several lines. Blackberries and strawberries of the Banner variety are lower, while raspberries are higher on rather light supplies. Apples show a considable range of prices, with stock of more varieties coming in, and while fancy stock is held fully up to the old quotations, there are many ordinary lots that move off with difficulty. Apricots are lower, with most offerings of rather unattractive quality, though supplies are limited. Peaches are plentiful and easy, with lower prices for all ordinary offerings. Pears also are inclined to weakness, with increasing supplies of ripe fruit which is pressed for sale. Plums and prunes are very plentiful and cheap, and figs are considerably lower, as supplies are increasing again. Cantaloupes are lower, with excessive supplies, and watermelons, though lower, are fairly firm. Some muscat grapes are appearing and bring satisfactory prices, Seedless and Malaga grapes also being fairly firm, the demand increasing with the supply.

Strawberries, chest:	
Banner	$ 3.00@ 4.50
Other kinds	3.00@ 4.00
Loganberries, chest	4.00@ 5.00
Blackberries, chest	2.00@ 3.50
Huckleberries, lb.	7@ 11c
Raspberries, chest	8.00@12.00
Apples:	
Gravensteins, box	$ 1.00@ 1.50
Other fancy apples	85c@ 1.25
Common	50c@ 1.00
Crabapples, large box	1.25@ 2.00
Pears: Bartlett, No. 1, box	1.25@ 1.75
do No. 2	65@ 75c
Apricots, small lug	75c@ 1.00
do large lug	85c@ 1.15
Peaches, box	30@ 60c
Carriers	65@ 85c
Clings, lugs	1.00@ 1.25
Plums, crate	50@ 75c
Prunes, box	25@ 40c
Figs: Double layer, drawer	60@ 85c
Nectarines, crate	75c@ 1.25
Cantaloupes, large, crate	2.00@ 2.50
Nutmegs, crate	75c@ 1.00
Watermelons, per dozen	1.25@ 2.50
Grapes, Seedless, crate	75c@ 1.00
Malaga	85c@ 1.00
Fontainbleau	40@ 50c
Muscat	1.00@ 1.25

Dried Fruits.

The dried fruit market still shows considerable strength, with an upward tendency in prices. Buyers in other markets are beginning to appreciate the situation and are coming out for supplies, while the local packers are taking practically all they can get at present prices. Evaporated apples have again been marked up, the Coast supply being very light with very poor crop prospects, though there is still considerable old stock in the East. Old crop prunes will not bring as good prices as new, but are in good demand at appearing quotations, and there is not much left, while new stock is moving well, many growers being willing to accept the present offers. Most growers are holding out for 5c or better for peaches, and nothing can be had under 4¾c. Offers for raisins have been advanced, as a number of packers find difficulty in getting supplies. An announcement of new crop selling prices from the Associated Company is expected this week. The New York Journal of Commerce says: "The policy of buyers to wait until they actually need goods and allow the producers to carry stock in the interim is still being observed by buyers in this section. Strong reports coming from the Coast as to crop conditions and probable out-turn on this season's crop are without influence apparently to change this policy. The trade in this section are withholding orders for spot or early fall delivery raisins out of the old crop. The Association has not yet made opening prices on 1913 raisins. Some brokers, it is reported, are offering to split commissions with buyers to secure business; but although some of them are willing to give about all they will make on sales, they find it extremely difficult to interest buyers. The Association stands pat on its prices and guarantee against its own decline up to October. The situation in California prunes shows no change. Offerings of large sizes for shipment out of the present season's crop in October are being sparingly made. The demand from home distributers is limited, and exporters seem to be satisfied for the present. Little news comes from the Coast respecting apricots, but that is of a strong character, and f.o.b. prices are held firmly up to previous quotations. Peaches are strong, though quiet. Late Coast advices indicate that the proportion dried this year will be exceptionally light, owing to the good prices obtainable in Eastern markets and the relatively high prices paid by canners as compared with what the packers are willing to pay growers for the fruit dried. Locally, little interest is shown by jobbers in the situation, and the demand from here for forward shipments from the Coast is reported to be light."

Evap. Apples, 1912 crop, per lb	6½@ 7 c
Apricots, 1913	12 @14 c
Figs: White, 1913	**3 @ 3½c**
Black, 1913	**2½@ 3 c**
Calimyrna, 1913	**4½c**
Prunes, 4-size basis, 1912	4 @ 4½c
do 1913	5 @ 5¼c
Peaches, 1912	4¾@ 5 c
do 1913	4¾@ 5 c
Pears, 1913	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912	3¼c
do 1913	3½@ 3¾c
Thompson's Seedless, 1912	**4½c**
do 1913	**3¾@ 4 c**
Seedless Sultanas, 1912	3½c
do 1913	3½c

Citrus Fruits.

Good oranges are commanding ready market at good prices in the East, but there is considerable small fruit in poor condition offered that does not sell for enough to pay freight charges. For instance, at the New York auction on Monday, Aug. 11th, four cars sold for an average of 40, 50, 75 and 85 cents per box, while good fruit sold at the same time and place at prices averaging as high as $6.35 per box for a car. At Boston, the same day, the auction prices were fully as high. Lemons are still bringing good prices and range from $4.10 to $6.30 per box. The average prices received so far this season are better than perhaps for any previous year. To the grower who lost his fruit by the freeze, the prices are but poor consolation, but to the one who has fruit to sell, the year is golden.

Shipments are being made from California averaging for oranges about 14 cars per day, and for lemons about 5 cars. It is stated that on August 1st there were less than 1,000 cars to be sent out for the balance of the season.

At San Francisco there is only a moderate demand for oranges at present, but values are firmly maintained. Lemons are firmly held, with a very fair demand, while limes and lemonettes are a little lower with more liberal supplies.

Oranges, per box—	
Valencia	$ 4.00@ 6.00
Grapefruit, seedless	2.00@ 4.50
Lemons: Fancy	6.00@ 8.00
Lemonettes	5.00@ 6.50
Limes	9.50@11.00

Nuts, Honey, Hops, Etc.

NUTS.

Values are still largely nominal, with no stock of any consequence remaining, but an announcement of prices on new crop almonds is expected at any time.

Almonds—	
Nonpareils	**17½c**
I X L	**16½c**
Ne Plus Ultra	**15½c**

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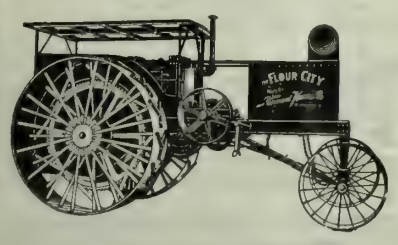

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GENERAL AGENTS
Stockton, Cal.

WHITTIER COBURN CO. S.F. SOLE MFRS.

Drakes	12½c
Languedoc	11½c
Hardshells	8 c
Walnuts, 1912 crop—	
Softshell No. 1	16 @16½c
Hardshell No. 1	15 @15½c
No. 2	10½c
Budded	17 c

HONEY.

Considerable new crop honey is still coming in, and as the immediate needs of the trade have been fairly well supplied, stock is beginning to accumulate. There is accordingly a little easier feeling as to prices.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted, white	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

While there is very little movement, local stocks are closely held, quotations standing as for some time past.

Light	30 @32 c
Dark	28 @30 c

HOPS.

New hops continue in strong demand, though a good many growers are still holding on, and buyers have not raised their last offer. The first shipments of new hops are just going out.

1913	20 @22 c

Live Stock.

The only change this week is a further advance in hogs, which are still in very limited supply.

Grass-fed Cattle—	
Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7 @ 7¼c
Medium	6½@ 6¾c
Heavy	5 @ 6 c
Hogs: Grain-fed, heavy	8¼@ 8½c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4¼@ 4½c
Ewes	3¼@ 3¾c
Lambs: Suckling	5½@ 6 c

DRESSED MEATS.

Steers	12 @12¼c
Heifers	11 @11½c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

Buyers continue to report a quiet market, and while some growers have sold at rather low prices, a good many are still holding in hope of a possible advance.

Spring clip:	
Southern mountain, free	8 @11 c
Northern, year's staple	13 @14 c
Humboldt, year's staple	18 @19 c
do short	13 @14 c

HIDES.

All lines of salt and dry hides are firmly held at the former level, present offerings finding a fair demand, while supplies are limited.

Heavy Steers, over 56 lbs.	14½c
Medium	13½c
Light Steers, under 48 lbs.	12½@13½c
Heavy Cows, over 50 lbs.	12½@13½c
Light Cows, 30 to 50 lbs.	14 c
Kip	14½@16 c
Veal	17½@19 c
Calf	17½@19 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25@ 50c
Dry	75c@ 2.00

HORSES.

A good many horses have been offered in the last week, and a good-sized lot of fairly attractive stock, consisting of chunks, drafters and wagon horses from California and Northwestern points has been put up at auction. While this tended to stir the market up a little, buyers are not yet taking any very great interest, and prices are irregular and low for anything but the most attractive heavy stock.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80
MULES.	
1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

NEW BOOKS RECEIVED.

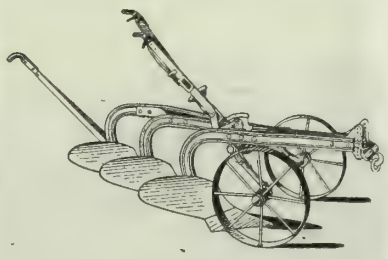
ROMAN FARM MANAGEMENT.—A very handsomely gotten out book by the Macmillan Company of New York. Price — net. The book is made up of agricultural writings of Cato and Varro, edited by "A Virginia Farmer." The American translator has made a readable volume from these two old Roman writers. The extracts show that these Romans knew intimately the routine of farm life, for they go into such details as the supplies necessary to furnish to the farm hands. They even specify the amount of wine which the field laborer should be allowed during the year. When the figs ripen, the allowance of bread is cut down, and it is pointed out that wind-blown olives are good for the farm hand. Breeding of stock, agriculture in various lines, also the best way to select a farm and build it up to a profitable property, besides many other important farm subjects are discussed. It is surprising to learn that the old Romans knew so many of what we now think are up-to-date farm practices.

AMERICAN IRRIGATION FARMING.—This is a handsome new book of over 350 pages by W. H. Olin, published by A. C. McClurg & Co., Chicago. Price $1.50 net. The author is Director of Agricultural Extension in the University of Idaho, and he has packed the pages full of information for beginners as well as everyone who wishes to make a success of farming "under the ditch." There are rules, tables, statistics, and seventy illustrations illuminating the text.

C. S. Briggs, president of the Briggs-Detroit Automobile Co., was a Pacific Coast visitor a couple of weeks ago. As a result of his visit, a large advertisement of his automobile appears in this issue of the PACIFIC RURAL PRESS. In speaking of his machine, Mr. Briggs said that he was making one to fit California conditions—light, strong and handsome. Large in value, small in price. Read the ad and send for full particulars.

Among the new advertisers in this issue is F. D. Phillips, who is the resident agent for a Canadian insurance company that loans money to farmers at low interest rates.

THE "NEW IMPERIAL" VINEYARD GANG PLOWS



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in either 2 or 3 gang
Steel or Chilled Bottoms
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FAIRMEAD for alfalfa

Every requirement for a profitable alfalfa home for you is fond at Fairmead.

8 to 10 tons per acre yearly.

Rich sandy loam soil.

Healthful climate.

Good neighbors.

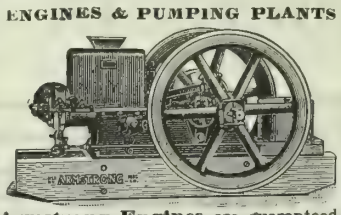
Excellent for olives, figs, etc.

On S. P. R. R., 5 hours from San Francisco

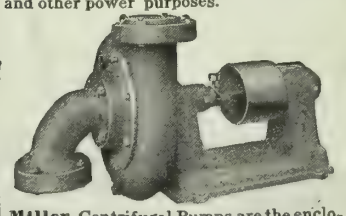
We are now subdividing 19,000 acres into 10, 20 and 40-acre tracts. Low prices, easy terms. Send for booklet "R."

Co-Operative Land & Trust Co.
595 Market St., San Francisco.

ENGINES & PUMPING PLANTS



Armstrong Engines are guaranteed for FIVE YEARS, are equipped with Magneto and patent roller valve gear. 1½,2,4,6,8,10,15,20-h. p. sizes. Just the Engine for pumps, saws, sprayers, grinders and other power purposes.



Miller Centrifugal Pumps are the enclosed runner, automatically water balanced kind. Greater capacity for less power. Longer life for less money. Arranged for gas engine or motor drive. Write for catalog and state requirements.

Norman B. Miller Co. San Francisco, Cal.
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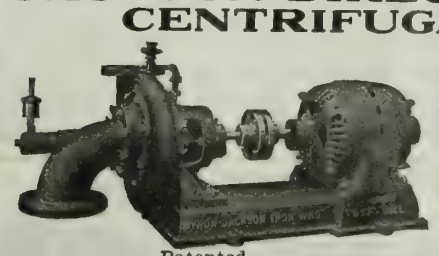
JACKSON DIRECT CONNECTED CENTRIFUGAL PUMPS



Patented.
Jackson "1912" Direct Connected Pump.

Efficient conditions are obtained only where the pumping unit installed is economical in operation and made by specialists having the benefit of years of study and experience.

Write our engineering department for details of design and economic features.

Write for our Catalog No. 47-A.

BYRON JACKSON IRON WORKS
LOS ANGELES, 212 N. Los Angeles St.
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TEN THOUSAND HEAD OF TURKEYS WANTED FOR THANKSGIVING.

We want the farmers of California to raise ten thousand head of choice turkeys for our Thanksgiving trade. Last year we sold fancy dressed turkeys as high as 30 cents a pound. Commence now to get your turkeys ready for the Thanksgiving market. Have them as large and fat as possible. Write us immediately how many head you will have ready for sale at this time, as we want to keep in touch with you from now on until after Thanksgiving and Christmas. Send us the names of all of your neighbors who have turkeys and about how many head each one has on hand, and we will certainly make it to your object to do so.

Mark and consign all produce you have on hand to us at San Francisco.

W. C. PRICE & CO., General Produce Commission Merchants, 211-217 Clay St.

Benicia-Hancock Disc Plows

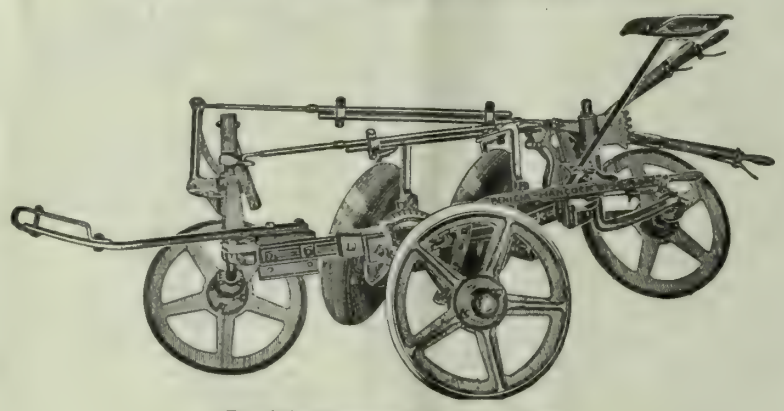
THE PLOW WITH A PEDIGREE

The man behind the hoe selects the livestock after due consideration of its lineage; his plant life, seeds, etc., must have the right genealogy before he buys.

Then why not a plow with a pedigree—the tool that tills the soil that makes the profits.

Benicia-Hancock Plows have advanced from stage to stage—keeping abreast or ahead of the times—and today without question heads the list, and represents the very highest type of plow manufacture.

THE PLOW YOU WILL EVENTUALLY BUY



Benicia-Hancock, 2-Disc Size.

A few exlusive features: Lighter draft than any other; number of discs and size of cut may be increased or diminished as desired; easier of operation, and simple of construction.

ABSOLUTELY GUARANTEED—YOU CAN'T LOSE.

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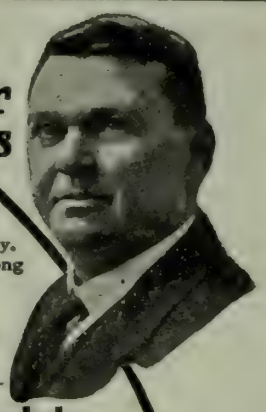
I have been a farmer for twenty five years



and during that time have gained experience which, combined with my inventive faculties, have enabled me to produce farming machinery which saves time, labor and money. The products I manufacture are the result of long experiments and careful observation.

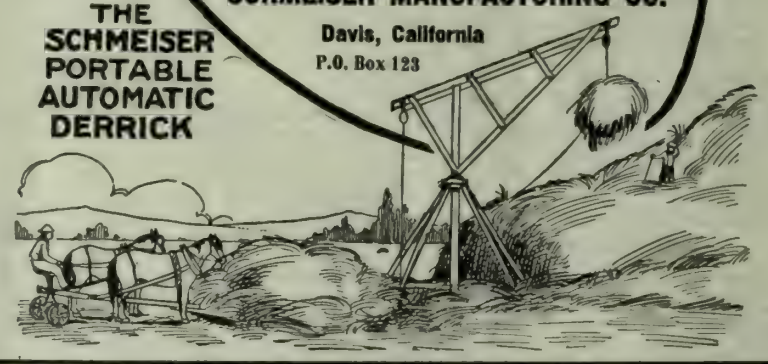
What You Can Do with The Schmeiser Portable Automatic Derrick

In moving hay from stack this derrick will do the work of 12 men. Loose or baled hay can be cheaply and quickly moved, dirt can be hoisted from excavations. Can also be used for raising building materials and lifting heavy loads of any kind. The Schmeiser Portable Automatic Derrick is portable and can be moved from place to place as easily as a farm wagon. This derrick is capable of doing a wide range of work, is simply constructed, easily operated and is always ready for immediate use.

WRITE US TODAY and we will send you illustrated and descriptive literature explaining just what this derrick can do and how it can save you time and money. Our derrick is being used all over the Coast because shrewd farmers appreciate its many advantages.

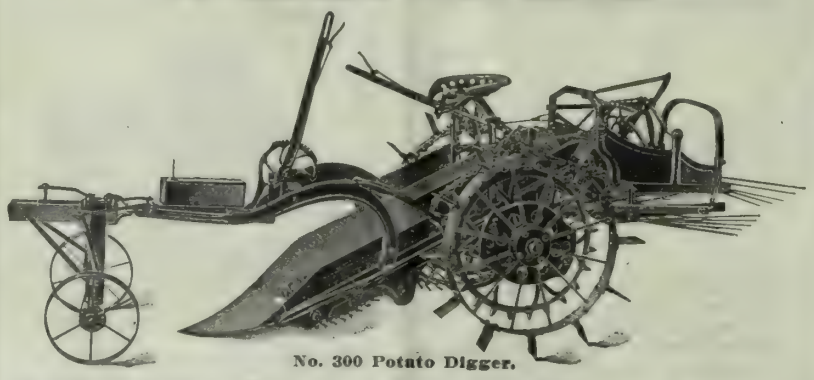
SCHMEISER MANUFACTURING CO.
Davis, California
P.O. Box 123

THE SCHMEISER PORTABLE AUTOMATIC DERRICK



Hoover Potato Digger

FOR CALIFORNIA POTATO GROWERS



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CAN SAVE YOU 10 DAYS' TIME
SAVES LABOR OF 20 MEN

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- ¶ Puts Potatoes in Narrow Row Easy to Pick.
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- ¶ Has 36-inch Drive Wheels.
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Concrete Flumes are Perishable and Obstructive.

ALL THREE WASTE WATER —TIME, MONEY, LAND AND LABOR.

In its day, each of the above methods served a purpose, but each was too wasteful and expensive to prove permanent. This made necessary the development of the "K T"—a system whose success has been so universal as to practically revolutionize irrigation methods throughout the Southwest. The "K T" is Efficient, Economical, Permanent. Once installed, your Irrigation Troubles will be overcome forever.

Write for the 8th Edition of our Brown Book. It's of priceless value to every rancher—yet costs you nothing.

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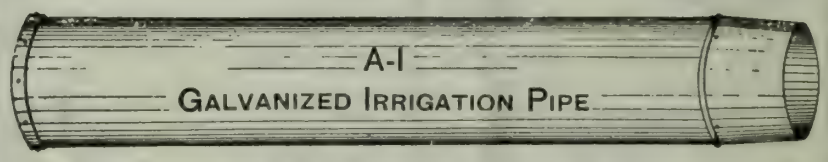
1234 E. 28th St. LOS ANGELES, CAL.



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BECAUSE it is made with a lockseam set down under 3500 pound pressure, which requires no soldering to make it water tight (solder will break loose by jarring and hard knocks).

A-I Pipe was awarded first prize at Fresno and Santa Clara County Fairs in 1912.

Send for new catalog with prices and valuable information.

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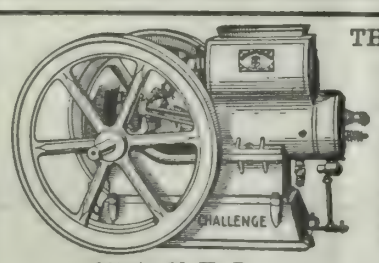

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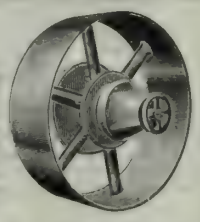
is recommended and guaranteed for its simplicity, efficiency and smooth running. Material and workmanship the finest that can be obtained. Weights, bore and stroke greater than any other engine. Catalog on request.



The Havana Double Grip Friction Clutch Pulley, best for your engine, because it is easiest to attach, adjust and operate, never slips, nothing to wear out.

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Manufacturers of Deep Well and Centrifugal Pumps.

WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

THE EXCLUSIVE PIPE HOUSE.

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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 8. SAN FRANCISCO, SATURDAY, AUGUST 23, 1913. Forty-Third Year.

Rotation of Crops with Alfalfa.

[Written for the PACIFIC RURAL PRESS by J. M. BOMBERGER, of Modesto.]

As a rule, the alfalfa grower in California starts by buying twenty, forty, or eighty acres of land, prepares it for irrigation, seeds it to alfalfa, harvests five or six big crops per year for five or six years, then his yields begin to dwindle down, and he is forced either to plow up his entire ranch at one time or to sell out. Or, if he is a dairyman, he feeds his alfalfa to his cows during those five or six years and perhaps puts his manure on the land and improves the quality of his herd by selection during those years; but at the end of five or six years the foxtail has gotten a good hold on his alfalfa land and, in spite of the manure, his crops begin to dwindle, and soon he will be obliged to sell his cows and plow up his entire ranch at once.

Stand and Stature of Corn After Alfalfa.

The worst feature about the above outlined systems is that the entire ranch stops producing at the same time, and the benefits of several years of selection in breeding is lost to the dairyman who did the work.

Even while I was yet milking cows for wages I noticed these errors, and I made up my mind that if I ever owned land I would try to remedy the above conditions by rotation of other crops with alfalfa. When I bought land several years ago I decided to try a six-year rotation, as follows: alfalfa, four years; barley and corn, two years. My plan is to plow up one-third of my land every second year, seed the land which I plow to barley in the fall or winter, then put the barley into the silo when in the dough and at once plant the corn and have the corn ready for the silo in the fall, and then the second fall seed the same land to barley again and in the spring to corn again, and the following fall plow up the next one-third of my place and seed the first one-third back to alfalfa, and so on in regular rotation.

Getting Ready for Good Rotations in the San Joaquin Valley.

While I have had only a few years' experience, I have been successful beyond expectations. Last December I plowed up my second tract. I am certain that during the season previous to plowing it up it produced fully ten tons of hay per acre. It had received two dressings of manure, one year apart, previous to plowing. I plowed it about nine inches deep, in December, 1912, and sowed barley. The barley was started by the rains, and, as the spring was dry, I irrigated it once in March and again in the beginning of May. I cut it and chopped it and put it into my silo May 19 to 23. The field contains not over twelve acres, including the irrigation ditch and eighty rods of road, and my crop of barley filled my 150-ton silo and there were eight tons left over. It was indeed a heavy crop. On May 20, as soon as a part of the field was cleared, I put on two plows and kept them following up the silo fillers, so that on May 24 the plowing was finished, and as the land was just damp enough for plowing but hardly wet enough to insure a good stand of corn, I turned on the water on May 25 and flooded the land, and as soon as it became dry enough I thoroughly disced it with a double-action cut-away disc, and then thoroughly harrowed it, and then on June 2 I planted the corn. I kept harrowing the land until the corn became too large. By that time the soil was in almost perfect condition: a deeply-plowed water reservoir well saturated, a well pulverized mulch just above the wet soil, and a covering of small clods above the dust mulch. As some of the shattered barley began to sprout and grow a little later, I cultivated it twice with shallow weed-cutting cultivator, and on July 16 I irrigated it and then cultivated it with a one-horse cultivator as the corn was too tall for the two-horse cultivator. The picture or pictures herewith were taken just sixty days after the corn was planted, when the corn was just starting to top out. If all goes well to maturity, I expect this crop to yield not less than 25 tons of ensilage per acre.

My reason for using barley rather than any other grain is because it becomes ready for harvesting ten days or two weeks earlier than any other grain and saves that time for the corn. The reason that I

(Continued on Page 175.)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to

PACIFIC RURAL PRESS CO., - - PUBLISHERS

Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

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FRANK HONEYWELL - - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager
D. J. WHITNEY - - - - - Associate Editor

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Aug. 18, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.28	.14	68	48
Red Bluff	.00	T	.00	96	58
Sacramento	.00	.01	.00	96	54
San Francisco	.00	.07	.01	76	54
San Jose	.00	.00	.02	90	46
Fresno	.00	.33	.00	100	56
Independence	.00	1.70	.00	90	50
San Luis Obispo	.00	T	.03	80	46
Los Angeles	.00	T	.00	80	58
San Diego	.00	.06	.00	72	60

The Week.

While it is difficult for us to resume at once discussion of current topics, from which we have refrained for nearly four months, there is one thing so clear and so significant to California development that we cannot postpone comment upon it. One of the plainest things in Europe is that modern agriculture is advancing upon the basis of the livestock industries. The most notable achievements in agricultural co-operation are by those interested in animal products. The dairy is surely the lighthouse of European farming progress. This is true all the way from northern Italy to Denmark and onward to England and Ireland. The whole continent is pushing the dairy, not only for its own sake, but for the by-products in pork and veal for which Europe is hungry because so much more available than beef. Still, the beef steer cuts a large figure in European agriculture. The horse, of course, is great, and sheep and goats almost universal. The quick returns from animals, their relation to soil fertility, and the general stability of values of animals are incidental attractions of the animal husbandry to European farmers, landowners, and capitalists. One cannot go about among such things as these without becoming convinced that California should build more strongly upon them. We have our fruit industries, it is true, and we saw nothing in Europe to compare with them for variety and value in a single country, but before we can reach our fullest and best development we must supplement our horticulture far more widely by use of land and capital in animal industry. We should organize for this purpose, and make it a line of systematic and intelligent promotion. It will enhance every legitimate industrial activity of the State, while it will at the same time increase the income from lands and multiply the comforts in homes of those directly engaged in a line of products which we are so largely buying from others instead of supplying ourselves and rolling up a great surplus for a hungry world. Europe is trying to do this under many handicaps, and is succeeding notably. We have advantages instead of handicaps, and are practically doing almost nothing—if our attainment is measured by our opportunity. This is one of the clearest lessons drawn from our observations in far places.

Out in the World.

[BY THE EDITOR.]

[In our last issue Professor Wickson discussed the origin of the present disposition to organize British agriculture on a co-operative basis and the effects apparently produced upon the condition and outlook of rural life on the British Isles. He now proceeds to indicate more definitely the methods of organization which have been developed and the spirit which seems to actuate those who are promoting the new regime in public opinion and affairs.—ASSOCIATE.]

The first thrust the American Commission made at the organized body of European rural credit and co-operation, to ascertain the substance and the soul thereof, let flow a stream of warm altruism and humanitarianism in which the investigators were nearly drowned—it was so copious and surprising. Our comments on the motives and methods of Italian and Hungarian co-operative institutions gave some intimation of these things, if we remember correctly. We went abroad, we supposed, to study borrowing and lending, which are popularly considered in America to be soulless things, and we found them soul-full—phases of the religious life of the people. We confess that we could not surely tell whether they were manifestations of pure religion or religion defiled by self-interest of its promoters, and we are not much nearer to a demonstration of that matter now than we were at the beginning. We still have a lurking suspicion that co-operation among European peasantry is about the only way out of the shadow of anarchy and socialism, and those to whom that shadow gives the hardest chill are governments, nobles, and the churches—more or less established—all of which are elements in the existing social order which have most to lose if that order should be seriously upset. It is true that in Germany such considerations are associated with a definite imperial ambition, more pervading than we found elsewhere, and that in France an emotional patriotism burns hot against all aggressors and inspires all Frenchmen to work tirelessly for national strength and prosperity, but these local phases all add to the impulse to invoke an emotional altruism which shall achieve agricultural advancement. All agree that agricultural prosperity is the foundation of all prosperity, but we are not sure that all leaders of agricultural co-operation are working for it for the benefit of all mankind. Most of them, on the other hand, seems to be using it as a means toward the advancement of their own kind of humanity as defined by race or geography, but we are inclined to think that this fact may add force and success to their efforts. It certainly provides visible and practical ends to strive for and influences public opinion and action as broader and purer altruism fails to do. It is, therefore, a religion of this world and not of the next: although it is generally accepted by the sky-pilots as a bottom heat which may force into quicker growth those seeds of the highest spirit of mankind which seem to have such a disposition to lie dormant nowadays.

Irish Idealism in Co-operation.

Such dreams as the foregoing paragraph suggests occupied and puzzled us not a little as we sped from place to place on the Continent, and our only consolation was the assurance which we felt that when we came to Great Britain we should find co-operation developed rather more as a cold business proposition which we could more fully understand and more definitely measure. This anticipation seemed to be justified, as our first contact with co-operation in England was a visit to the selling outfit of the "Live Pig Society" at Ipswich and the "Egg-gathering and distributing" establishment at the same point. Here, thought we, we are up against ham and eggs—surely there is something in this for the stomach rather than for the soul of man. But as we scratched the round back of a victim of the Live Pig Society and admired his coat, pure and pink as a petal of a Bon Silene rose—talking, meanwhile, with the expounder of the gospel of British co-operation who attended us—we found ourselves snatched from pigs to poetry by the declaration that "the impulse to English agricultural organization was drawn from Ireland." This fact was duly set forth last week, but the inspiration of it we purposely avoided at that time so that it might be considered in this connection.

Now Sir Horace Plunkett, as may be inferred from what we said about him last week, is the Discoverer and King of Co-operation in British agriculture, but he is not the Priest thereof, for kings and priests do not seem to be merged in this generation as they were in the Order of Melchisedec. The priest and philosopher of Irish agricultural co-operation is George W. Russell, who is also a poet, an artist in oil colors, and editor of the Irish Homestead—being thereby the most esthetically endowed editor known to this writer. It was very clear, however, that as Mr. Russell stood among his associates in the meetings in Dublin, they did not count his ability to write epics and paint sunrises as any detriment to his apostleship of co-operation, but rather as an added qualification thereto. This assured us that in its origin and current philosophy, British agricultural co-operation, born in Ireland, had one (or more) upon agricultural co-operation on the Continent in the richness of its sentiment, because we found there no poets nor artists leading in co-operation, though there were of priests quite a plenty. We support this conception of the situation by quoting from the beautiful essay read by Mr. Russell at the Dublin meeting, a few sentences:

It is the business of the rural reformer to create the rural community. It is the antecedent to the creation of a rural civilization. You have to organize the community so that it can act as one body. It is not enough to organize farmers in a district for one purpose only—in a credit society, a dairy society, a fruit society, a bacon factory, or in a co-operative store. All these may be and must be beginnings, but if they do not develop and absorb all rural business into their organization they will have little effect on character. No true social organism will have been created. If people unite as consumers to buy together they only come into contact on this one point; there is no general identiy of interest. If co-operative societies are specialized for this purpose or that—as in Great Britain or on the Continent—to a large extent the limitation of objects prevents a true social organism from being formed. The latter has a tremendous effect on human character. The specialized society only develops economic efficiency. The evolution of humanity beyond its present level depends absolutely on its power to unite and create true social organisms.

I have spoken of the creation of the rural community, but it really cannot be created. It is a natural growth when the right seed is planted. Co-operation is the seed. Let us take Ireland. Twenty-five years ago there was not a single co-operative society in the country. Individualism was the mode of life. Every farmer manufactured

and sold as seemed best in his eyes. It was generally the worst possible way he could have chosen. Then came Sir Horace Plunkett and his colleagues, preaching co-operation. A creamery was established here, an agricultural society there, and having planted the ideas it was some time before the economic expert could decide whether they were planted in fertile soil. But that question was decided many years ago. The co-operative society, started for whatever purpose originally, is an omnivorous feeder, and it exercises a magnetic influence on all agricultural activities, so that we now have societies which buy milk, manufacture and sell butter, deal in poultry and eggs, cure bacon, provide fertilizers, feeding-stuffs, seeds and machinery for their members, and even cater for every requirement of the farmer's household. This magnetic power of attracting and absorbing to themselves the various rural activities which the properly constituted co-operative societies have, makes them develop rapidly, until in the course of a decade or a generation there is created a real social organism, where the members buy together, manufacture together, market together; where finally their entire interests are bound up with the interests of the community. I believe in half a century the whole business of rural Ireland will be done co-operatively.

You will understand the difference between a rural population and a rural community, between a people loosely knit together by the vague ties of a common latitude and longitude, and people who are closely knit together in an association and who form a true social organism, a true rural community. Wherever rural prosperity is reported of any country, inquire into it and it will be found that it depends on rural organization. Wherever there is rural decay, inquire into it and it will be found that there was a rural population, but no rural community, no organization, no guild to promote common interests and unite people in defence of them.

The genius of rural life has not yet appeared. We have no fundamental philosophy concerning it, but we have treasures of political wisdom dealing with humanity as a social organism in city, in states, or as great nationalities. It might be worth while inquiring to what extent the wisdom of a Solon, an Aristotle, or an Alexander Hamilton might be applied to the problem of the rural community. Statesmen who have devoted so much thought to the constitution of empires and the organization of great cities, who have studied their psychology, have almost always treated the rural problem purely as an economic problem; as if agriculture was a business only and not a life.

Do We Need Isolation or Correlation?

The reader will perceive by the foregoing declaration of the fundamental purposes and ultimate ends of agricultural co-operation that our anticipation of finding in Great Britain a plain path to better farming-business received something of a bat in the eye by this glare of the philosophy of rural life. Instead of escaping from the emotional fervors of the continent to something cooler, we encountered what seemed to be a hotter wave of fancy and sentiment. We do not propose to analyze it; let the reader see what he can make of it for himself.

We content ourselves with the single reflection that it does not appear to us that the adjustment of the relations between city and country life will come through emphasizing their differences. They have been different too long and the rising generations have shown too clearly which they prefer. We need now correlation, not segregation. We believe that agriculture is chiefly a business and should not be a life, in the sense of being apart from the life of the rest of the world. We believe farmers should come more, and not less, into the common duties, responsibilities and opportunities of citizenship. We believe that if farmers come together cordially and effectively on business matters, other relations will take care of themselves. On the other hand, if you insist that farmers will never be properly associated unless they sleep together, there will be an amount of snoring and kicking which will throw them farther apart than they are now.

Farmers should attain greater influence and prominence in public affairs for their own sakes and in justice to their industry, but to do this they must mingle in public affairs. There is fighting to do, and one cannot learn to fight by following the life of the rural hermitage. Organization is essential, but it must result in bringing the farmer as far into the world as his spirit, talent, and training justify. Mr. Russell will say in a later quotation, that the farmers' work in public affairs must be done "by the farmer and his friends." This seems to anticipate that agriculture must have two classes, the industrious members of the rural community, and the thinking and preaching people who will represent them—viz.: the beneficent nobility of birth, property, or letters. This is un-American. Our view is that the farmer must create his own industry and represent it himself in the highest places. To this end he must feel that, in this country, his birth is as good as anybody's and he must attain property and education inferior to none. In these lines, organization must be his chief working force and method.

What Has Been Done in Great Britain?

But perhaps we are taking this philosophy and prophecy of British agricultural co-operation too seriously; or, possibly, the philosophy may be right for British peasantry when administered by beneficent upper classes and paternal government; or, perhaps, British farmers are taking to it because of its business efficiency and ignoring its philosophy—this last seems to us most probable. However that may be, it is going fast and achieving such things as were intimated, in part, in our last issue. A few more facts of its achievements may be cited from the testimony presented at the meetings of the Commission in Great Britain:

In England and Wales there are 495 affiliated agricultural co-operative societies with an aggregate membership of 45,000 persons and making an aggrgeate business turn-over of $10,000,000.

In Scotland there are 106 such societies with an aggregate membership of 7140 and a turn-over of $1,515,200.

In Ireland there are 933 such societies with an aggregate membership of 100,000 and a turn-over of over $15,000,000.

Probably this is rather a small fraction of the total value of the buying and selling of agricultural materials in Great Britain, but it is certainly large enough to demonstrate the importance and indicate the influence of the undertaking.

The work is very broad and touches nearly all lines of agricultural activity, as the following grouping of affiliated societies according to their chief functions will show: purchase of machinery and supplies; produce selling; central trading boards; dairy production and sale; eggs and poultry; fruit and garden products; improvement of live stock; subdivision of land in small holdings; land renting; wool industry, live pig industry, bacon industry, co-operative produce distribution; agricultural insurance; agricultural credit; flax handling. In short, societies for co-operative producing, improving, and selling; for protecting and promoting almost everything agricultural which needs such service—all such are specially organized and then affiliated, as will be briefly described.

How the Work Is Begun and Promoted.

There are probably as many different kinds of farmers' societies now existing in any of the leading States of this country as there are in Great Britain, but there are two differences between our societies and theirs; first theirs are created to serve a more prevalent and distinct advantage in buying and selling for their members; second, theirs are all affiliated in central organizations, ours are for the most part unorganized and unassociated in their work. The really unique thing about co-operation in Great Britain is that it is proceeding under the constant effort of a central body with three branches, viz.: the Agricultural Organization Society (or, as it is always called, the "A. O. S."), which is the central body, with which the Irish Agricultural Organization Society (or the "I. A. O. S."), and the Scottish Agricultural Organization Society (or the "S. A. O. S.") are affiliated. The Welch outfit is a branch of the central or English Organization Society, while the Irish and Scotch have distinct but affiliated existence therewith.

All these societies, which are always affectionately designated by pronouncing the initial letters indicated above, are officered, in part, by my lords and gentlemen, who are quite as full of the milk of human kindness and the fire of patriotism as any of the exalted patrons of co-operation whom we found on the continent. They serve without compensation and do real, hard work. Other officers are actual farmers, and the teaming is good on all the boards. The societies have brought themselves into such high esteem that the government acts with and through them, making large grants of money to be expended as these societies desire and making the societies the almoners of such grants in their several territories. Although it seems to have come about in a different way, the British government is as closely participating in the promotion of agricultural co-operation as are the governments of the continent, and while we hear just as much about co-operation building from the bottom upward in England as elsewhere, we also see the usual amount of philanthropic tackling thrown down from above, and presumably for the same reason, viz.: to improve the foundations of the existing social order.

But Mr. Russell, as quoted above, is very sure that the government must provide but not control. At one time he said this:

> The necessary organization work among the farmers must be carried on by an organizing body which is entirely controlled by those interested in agriculture—farmers and their friends. To ask the State or a State department to undertake this work is to ask a body influenced and often controlled by powerful capitalists and middle agencies, which it should be the aim of the organization to eliminate. The State can, without obstruction from any quarter, give farmers a technical education in the science of farming; but let it once interfere with business, and a horde of angry interests set to work to hamper and limit by every possible means; and compromises on matters of principle, where no compromise ought to be permitted, are almost inevitable. A voluntary body like the Irish Agricultural Organization Society, which was the first to attempt the co-operative organization of farmers in these islands, is the only kind of body which can pursue its work fearlessly, unhampered by alien interests.

An Ultimate Ambition.

It is interesting also to remember that Mr. Russel looks forward to a new social order, the rural community, the nature and constitution of which he outlines in the quotation we first made from his address, and he foresees for it such sovereign power as this:

> The business of distribution of the produce and industries of the community would be carried on by great federations, which would attend to export and sale of the products of thousands of societies. Such communities would be real social organisms. The individual would be free to do as he willed, but he would find that communal activity would be infinitely more profitable than individual activity. We would then have a real democracy

carrying on its own business, and bringing about reforms without pleading to, or begging of, the State, or intriguing with or imploring the aid of political middlement to get this, that, or the other done for them. They would be self-respecting, because they would be self-helping above all things. The national councils and meetings of national federations would finally become the real Parliament of the nation, for wherever all the economic power is centered, there also is centered all the political power. And no politician would dare to interfere with the organized industry of a nation.

What Is There in It for Us?

In the wonderful growth of agricultural co-operation in the British isles there is for us a clear demonstration of the feasibility of advancing prosperity in the rural districts by producers working together to buy their requirements at wholesale for distribution by their own representatives, and to sell their products without the intervention of so many handlers between the farm and the consumer. Those who are looking for suggestions on direct trade should study British achievements therein. In this work the British farmers found their way open because of vast agencies for distribution which co-operating consumers have built during the last three decades, and near approach of producers and consumers is squeezing out many costly and useless "middle agencies" as the British politely call them. There is also much to learn in the study of the societies which they have organized for systematic promotion of co-operation and the way they have won the support of all political parties to the enactment of laws favoring producers' organizations. The progress attained in the correlation of public educational effort to the protection, promotion and popularization of agriculture is also notable and suggestive. In agricultural credit organizations they have done little but are working at it. The British farmer resembles the American in not caring to assume indefinite responsibility for his neighbor and resenting the claim of the community to know his individual affairs. Besides it seems true that there is less need for self-banking by farmers because existing commercial banks have plenty of money to lend at about 5% and readily accept the collective security of co-operative societies without pursuing the individual members thereof, as they do on the continent. British gold flows at home as well as abroad when the bowl is properly tipped and organization seems to drive out the Shylocks of the country stores by giving more conscientious capitalists a chance to come in.

We are inclined to believe that we have much to learn from what Great Britain is doing although we do dissent from much of the philosophy of it as we heard it expounded.

Au Revoir.

Having now swung the circle of the American Commission on Rural Credit and Co-operation, we take leave of the traveling function, for the present at least. We shall naturally have much to say about the relations of farmers to each other and to the rest of the world, of which so many significant things have been seen and stored in memory. It will be more comfortable, however, to comment upon our observations from the tripod than from the car-seat or the deck-stool, and not less acceptable to the reader also, for no man is more wearisome than he who, having made a certain trip, proceeds to travel upon the patience of his friends during the remainder of his life.

Thinning Apples.

[Although it is too late to thin apples, it is perhaps just the right time to figure out how much this year's crop would be worth if the fruit had been spaced to attain larger size. Of course, the proposition is not universal, for California apples do often come too large, especially on young trees, but still there are too many small apples, and anyone who is likely to have them should guard against it. A very interesting and suggestive discourse on this subject has just been published by the Utah Experiment Station, in which Leon D. Batchelor gives conclusions drawn from general experience and from specific experiments. We take leading parts of the work.—EDITOR.]

In the production of fancy boxed apples, the necessity for thinning has been more apparent as competition has become keener. The practicability of thinning peaches and pears is no longer doubted, but the majority of apple-growers have not yet realized the value of taking up systematic work in the thinning of apples. The time is fast approaching when the intermountain fruit-grower will be forced to conclude that it no longer pays to grow ordinary fruit.

Questions of Size.—The larger the apple, within certain limits, the larger the edible portion, the more highly it is valued. Two perfectly sound, well-colored Jonathan apples below 2¼ inches in diameter would be considered culls by any fruit shipping association, and either fed to the stock or made into cider or thrown away. Yet, one Jonathan apple with exactly the same characteristics as the aforementioned two, except being about 2¾ inches in diameter, would be considered a fancy apple and highly prized by any lover of fruit. The market demands a certain sized apple to be acceptable to the trade; whereas a Jonathan 2¼ inches or less in diameter is considered a cull and worth about 5 cents a bushel for cider, a Jonathan 2¾ inches in diameter is considered a fancy grade and would wholesale on the average for $1 to $1.25 per bushel. That is, according to the market standards, by increasing the diameter of the apple one-half inch, we increase its market value twenty to twenty-five times. Surely if we are engaged in commercial apple production, we cannot overlook an opportunity like this. By the removal of part of the crop at an early stage in its development, this increase in size can be obtained, and it is often impossible to obtain it otherwise.

Experimenters and the most successful growers have long since advised and practiced the thinning of fruit for the purpose of improving that which remains.

For the Sake of the Tree.—Although the increase in the current year's crop is ample reason for thinning, it is not the only benefit to be derived. By reducing the tree's crop this year, there is more likelihood of a good crop the following year. Much of the so-called habit of "alternate bearing" in apple trees is directly traceable to the fact that they overbear one year and recover from this overtax by bearing a very light crop the following year. Many broken limbs in the orchard could be averted by proper thinning and much time and money saved in propping the orchard.

Methods.—The actual methods to be used in this operation will vary somewhat with the conditions, such as soil, age of trees, varieties and methods of irrigation and pruning. The fruit-grower should experiment and learn the best methods to follow under his conditions. Some people thin to a definite number of boxes on a certain aged tree. This may be determined on one or two trees by actually counting the apples. These counted trees may then be used as models, so to speak, and thin the others accordingly. Other growers have learned by experience the proper distance apples should be from each other on the tree if they are to reach a marketable size. For the past two years in thinning Jonathans to a minimum distance of four inches, on eight and nine-year-old trees, there were still too many apples remaining for their maximum development. A minimum distance of five to six inches would no doubt have given better results under the existing conditions. Gano trees nine years old, thinned to one fruit on a spur, with the spurs a minimum distance of about six inches, gave good results.

The above experience may serve as a guide in helping each grower to determine the proper method to follow under each individual case. Certain thinning experiments have been carried on by the Ohio Experiment Station, in which case the fruit was left the minimum distance of eight inches. This seemed to give the best results under the conditions. It is often suggested that pruning may be substituted for thinning. To be sure, pruning thins out the fruit buds very materially, but it can hardly take the place of thinning. Some relief must be had for the crowded cluster on the individual branches, and again such severe pruning as would properly reduce the crop on a bearing apple tree would likely be too severe pruning otherwise.

For the best results, the thinning operation should commence immediately after the June crop. The work should be done while the apples are an inch to an inch and a half in diameter.

Concerning tools for this work, some varieties like the Gano and Ben Davis are easily thinned by hand, while varieties with short fruit spurs are not as readily handled this way and the work may be hastened by the use of a small shear made especially for this purpose. In any case, care should be used not to break or injure the fruit spurs in the operation. Very few fruit spurs will be broken by the careful worker if the spur is grasped firmly in one hand while the apples are removed with the other. An upward and backward twist of fruit will loosen the stem from the spur without disturbing the remaining fruit or breaking the spur. One or two apples are often removed from a cluster in this way, leaving the remaining apple undisturbed. Careless workers who persist in pulling off the fruit should not be tolerated, as this practice loosens much of the remaining fruit and breaks off many spurs. A light picking ladder will hasten the work with the older trees, and the entire bearing surface may be easily reached.

Cost of Thinning.—The cost of this work is only slight compared with the increased returns. The actual time in thinning will be saved at harvest time in sorting the crop. If, however, full time is charged to this thinning work, the cost should not exceed 1½ to 2 cents per box of harvested fruit. In case of the Gano variety, which is more readily thinned than some other sorts, the cost will hardly exceed 1 cent per box, on low-headed trees.

Girls and boys can be used entirely for the work, which will keep the cost well within the limits noted above. Girls are generally quicker and oftentimes more careful than boys. From 10 to 15 cents per hour can be profitably paid for this work.

Ben Davis and Jonathan.—The following results, obtained during 1911-1912, show the returns in dollars and cents for this operation. In 1911, two varieties were used, Ben Davis and Jonathan. The trees were eight years old and were well cared for along the lines of cultivation, irrigation, spraying, pruning, etc. Both varieties were thinned to a minimum distance of four inches and in case the fruit spurs were closer than four inches, all the fruit was removed from one of them. The thinning was done immediately after the June drop, when the apples were from 1 to 1½ inches in diameter. The following results were obtained:

Ben Davis (eight-year-old trees): four trees per plot: 1911. The thinned plot was thinned to a minimum distance of 4 inches.

	Culls Below 2¼.	Choice 2¼ to 2½.	Fancy 2½ up.	Total.
Av. price, box...	Not salable	$0.55	$0.75	33
Unthinned	10	18	5	33
Thinned	2	10	19	31
Thinned fruit, gross.....				$19.75
Unthinned fruit, gross				11.45

Charging 2 cents per box for the harvested crop for thinning amounts to 62 cents for the four trees. Twenty-nine boxes at 12 cents per box were required to market this plot, making a return of $15.65 for the apples on this plot. The unthinned plot required 23 boxes to market the crop, and with no charge for thinning, made a return of $10.90.

Net return of thinned plot (4 trees)	$ 15.65
Net return of unthinned plot (4 trees)	10.99
Net increase (4 trees)	$ 4.66
Net increase per tree	1.16
Net increase per acre	113.40

Trees were set 16x24, making 115 per acre.

The Jonathans showed a net increase of 30 cents per tree. It was very evident that this could have been very materially increased if even more fruit had been removed. As noted above, the minimum distance of four inches seemed too close on these trees. If the thinning had been done to a minimum distance of five or six inches, the percentage of fancy fruit would no doubt have been greater. On some of the heavier orchard soils where plenty of water is available, the Jonathan variety may be able to develop a satisfactory crop at a minimum distance of four to five inches. The soil on the experimental plots is a gravelly loam and only a moderate amount of water is available.

Jonathan and Gano.—During the season of 1912, Jonathan and Gano trees were used in the experiment, the same trees in the case of Jonathans that were used the previous season, with the following results:

JONATHAN TREES (NINE YEARS OLD), 1912.

Plot C.—Unthinned.

Grade.	Amount in pounds.	Selling Price per 100 lbs.	Total.
Culls	214	$0.10	$0.21
Choice	578	1.20	6.93
Fancy	203	1.90	3.85
Extra fancy	23	2.20	0.50
Total for 4 trees	1018		$11.49
Average per tree	254		2.87

Plot A.—Thinned to a minimum distance of 4 inches.

Grade.	Amount in pounds.	Selling Price per 100 lbs.	Total.
Culls	138	$0.10	$0.14
Choice	532	1.20	6.38
Fancy	368	1.90	6.99
Extra fancy	38	2.20	0.82
Total for 4 trees	1076		$14.32

Average per tree (thinned)	$ 3.58
Average per tree (unthinned)	2.87
Average increase per tree in favor of thinning	0.71
Average increase per acre in favor of thinning	81.65

Trees were set 16x24 (115 per acre).

In the above calculation for 1912, no charge was made for thinning. Experience shows this is fully paid for in reduced cost of sorting, when the fruit is packed. The culls were salable in 1912 at 10 cents per hundred pounds for cider, while this grade was a total loss in 1911.

Interesting Contrasts.—Per cent of crop in different grades on thinned and unthinned Ben Davis plots, 1911:

	Culls.	Choice.	Fancy.
Unthinned	30.3	54.5	15.1
Thinned	6.4	32.2	61.3

Per cent of crop in different grades on thinned and unthinned Jonathan plots, 1912:

	Culls.	Choice.	Fancy and extra.
Unthinned	21	57	22
Thinned	13	49	38

The above results are only what may be expected under average conditions in the irrigated sections of the intermountain region. Even though the increase net returns are only $30 per acre, as in case of the Jonathan trees in 1911, this factor can hardly be overlooked by commercial fruit growers.

All varieties cannot be handled the same, and conditions vary with age of the trees, and cultural practice. Frequently certain varieties or certain trees of a variety will need no thinning some particular season. Trees severely pruned will not need as much thinning as otherwise. But by far the majority of the good commercial sorts in this region have a tendency to and are allowed to overbear.

The grower must study his own problems and if only 20% of the crop or even less can be graded as extra fancy, something is wrong. Oftentimes it is an over-burdened tree.

TRY INOCULATION.

To the Editor: I have a white clover lawn which has not done well, although it was planted in early spring of this year and has had plenty of water, and while the soil was rich, I have used a commercial fertilizer, and still the lawn seems to be at a standstill. I am under the impression that the soil is lacking in certain bacteria which are beneficial to the growth of the clover. Can you suggest what to do in this matter?—F. K., Woodlake.

You can try inoculation by taking some soil from any lawn or field in which clover or alfalfa is growing satisfactorily. Scatter this over part of the lawn, wash down with a good sprinkling, and note the result as compared with the untreated parts. Of course, comments of ours can only be conjectures for lack of sight of the plants which might indicate some inhospitality in the soil, in spite of what you say of its quality and treatment. It is not unusual, however, for white clover to go slow the first summer, even with good treatment. It ought, however, to do better in September and later, if conditions are favorable.

Experience With Frosted Citrus Trees.

To the Editor: Kindly solve following doubts. Up to last winter I supposed my ranch to be in a frostless district. At any rate, during the nine previous years that I had owned it, it had been immune from damage by frost. This spring I had to saw off 22 acres of three to six-year-old lemon trees close to the ground. The roots have sent up vigorous growing suckers from the stumps. I have cut off all the suckers but three or four to the stump and headed back those left about two feet from the ground, and they have each branched from five to ten branches at and below point where the tops were nipped, said branches from two to four feet high. I have also driven a lath in the ground by each stump, to which I have tied the young trees, and shall drive an additional heavier and stronger stake.

Two questions arise in my mind that I cannot answer. First, we are subject to very hard winds, some years, from the north, and as the growing sprouts split from the trunk very easily I am afraid to cut them to one sprout per stump lest same hard wind or accident split it off and I lose the tree, for I think it will be years before these sprouts are safely grown into the stumps. Can I leave three or four sprouts permanently, thus practically heading the tree right at the ground, as is the best plan for growing olive trees, according to my experience? Or what shall I do with them?

Second, what shall I do with the numerous branches that have started where the suckers were nipped two feet from the ground? They are already top heavy, and if I nip each branch back to 6 to 10 inches from main stalk they will again rebranch and give me from 25 to 50 branches starting out within three feet of the ground, making a mighty tangle and a top-heavy young tree.

Cutting Back After Frost.—I do not think the advice of representatives of the Agricultural School last spring was timely or good advice, i. e., "not to touch frozen trees until they had started a vigorous growth and thus determined the demarcation between frozen and unfrozen wood."

It did not appeal to me as reasonable at the time, for I thought there would be a vast waste of strength and vitality pumping sap into branches where the cambium layer was irreparably injured and yet with vitality enough to take the sap. I cut my old trees back at once to where the bark looked sound, after much cutting and scraping of bark to form a pretty good idea how much of the branch would live, and I waxed all cut ends. The result was that my old trees at once began to send out an infinite number of little fruit-wood branches from dormant buds all along the stubs of branches, and today they have as pretty tops as I ever saw. My neighbors waited until June and July to do their trimming. The result was very few fruit spurrs; scarcely any branches of old tops in commission; and mostly big, vigorous water suckers from below the crown of the old tree. I left two trees, for an experiment, until July, and I will lose two years more time on these two trees, and I doubt if they will ever make good trees. J. H. LEWIS.

Ontario.

You can certainly make serviceable trees by budding into several stems as you propose, watching to keep rot out of the stumps from which they start.

By putting in buds now or a little later, you can carry them as dormant buds for a spring start, reducing the tops as the new buds make growth enough to take the sap. We should not head back the tops, but thin out the shoots so they will catch less wind.

As for cutting back after frost, we did some talking on that line ourselves, but we do not remember advising anyone to wait for "vigorous growth" such as would be manifested by strong suckers. We said wait until shoots come which seem to be good growth and not going back after a few days. We never had an idea that anyone would wait until June or July. We saw plenty of trees in April with good growth to cut back to.

PRUNING THE PRUNE.

To the Editor: As an interested reader of your paper and as a pruner of considerable experience, I have, of course, read Mr. Coates' article in the RURAL of July 19, on "Pruning the Prune." While Mr. Coates does not positively advise the following of the French method of pruning, he leaves it open for those who are inexperienced to fall into that way, which is particularly dangerous to those who are not familiar with pruning.

I do not hesitate to say that the French method of pruning the prune would be most inadvisable, in my opinion. No hard and fast rule can be followed, as prunes on almond and Myrobolan root differ greatly in habit. Most surely pruning is necessary to good results. I have had little experience outside of the Santa Clara valley, which may be tantamount to saying I do not know much, but as far as my knowledge of the subject goes in this valley, I would most emphatically condemn the French method as set forth by Mr. Coates. For the sake of the unwary, publication of this will be appreciated.—Ernest A. Dumpace, Morganhill.

It would help to a more definite and fuller understanding of this question if you could find it convenient to prepare a longer letter outlining what pruning you believe a prune tree ought to have. This would give us all a chance to attack a very interesting and important subject, and all of us might not conclude to be very far apart.

PEARL CHAMPION GOOSEBERRY?

To the Editor: Kindly advise me if the Pearl Champion gooseberry can be successfully grown in this vicinity?—Subscriber, Hayward.

We do not know the "Pearl Champion." The "Pearl" is a small variety, in size and appearance somewhat justifying its name, and it origated from American ancestry in Canada. The "Champion" is a good sized fruit believed to have originated in Oregon, and a good variety in California—in the few places where gooseberries do well at all. Your district is such a place. To determine what the "Pearl Champion" will do with you, you must try it, unless you can find some other grower who has already made the test in your vicinity.

ALAMEDA COUNTY FAIR.

A letter from W. J. Dakin, secretary, states that the prospects for the Alameda County Fair, to be held at Pleasanton from September 24 to 28, are very promising. This association had a very successful fair last year. It owns its own buildings and has one of the best tracks in the State. The location is ideal for parties from the San Joaquin, Santa Clara and Livermore valleys as well as the bay cities to attend. A good premium list has been issued, and the list of entries for the races is unusually good. Make your preparations to attend this fair.

Orange Decline in the Azores.

Oranges, as we all know, are in much different surroundings in California than in their native habitat, which is essentially one where the air is warm and laden with moisture, or at least so close to the ocean or affected by it that the air is certainly not dry like it is in nearly all the citrus districts of California, and where ocean influences make the climate much alike during all seasons.

The Azores have such a climate, and excellent fruit could once be raised there and could be now if scientific culture were used. It might also be very profitable, owing to cheap labor. Yet the decadent condition there, due to the fact that they do not take advantage of their opportunities, is shown in a recent consular report by E. A. Crecvey, Consul at St. Michael's. Down in Hawaii they have a similar climate and cheap labor and might step in and take advantage of the opportunity. This report says:

It appears that orange culture here reached its height in 1872, during which year over 300,000 cases were exported, each case containing 1,000 oranges. The declared value that year was $600,000. England was the principal purchaser, and the fruit was transported entirely by sailing vessels.

Since 1872 the crop has fallen off until today practically no oranges are exported. The reasons given are Spain's competition, disease, and unscientific treatment of the trees and fruit. Spain had, and still has, a decided advantage over St. Michael's by facilities in shipping the fruit by steamers direct, while St. Michael's was dependent upon sailing vessels.

Orange culture at present is in an unsatisfactory condition. The trees are neglected, and fully half of the ripe fruit, it is estimated, is destroyed by rats. Windfalls retail at approximately 10c per hundred, and thousands of them are left on the ground to rot. Today the retail selling price of good fruit varies from 5 to 20c per dozen.

Two species are grown here, "San Miguel" and "Selecta." The former ripens from December till June, and the latter are at their best from June till September; thus it will be seen we have ripe fruit nine months in the year. Experts have declared the St. Michael's Selecta to be superior to any orange grown, even surpassing in flavor the oranges of the Cape Verde Islands, of which the Selecta is a native. When the orange-growing industry was at its height an alqueire (2.82 alqueires equal 1 acre) of land, with trees planted 20 feet apart, would yield 30 cases of oranges, 1,000 oranges per case. For adult men and women, wages vary from 20 to 65 cents per day.

BLACK MEDICK.

To the Editor: I am enclosing you a plant which is something new in this locality. Please tell me what it is, and has it any value as a forage plant?—J. T., Kelseyville.

ANSWER BY DR. H. M. HALL.

The plant sent is the Black Medick (Medicago lupulina). It is rather widely distributed in California, although it is nowhere abundant, and this latter fact is the only reason why it is not of much forage value. It does not usually grow in sufficient abundance to make it of much importance, but it is undoubtedly rich in nutritive matters, as are all of these clovers.

ROTATION OF CROPS WITH ALFALFA.

(*Continued From Page 169.*)

make silage of the barley rather than make hay or grain of it because I can again save from a week to ten days for my corn, and my cows are very fond of well made barley silage, too, and they pay me a good price for it.

The tract which I had formerly plowed up and seeded back to alfalfa is doing very well, even better than when alfalfa was first seeded on it. By this method of rotation I feel certain, from my experience thus far, that I can keep my ranch producing maximum crops continuously and also keep out the foxtail. Foxtail, being a biennial, is not easily discouraged by discing or even by one plowing; but when a tract of land receives five deep plowings, several discings and a number of cultivations, all in two years, it is enough to thoroughly discourage the fox-tail for the following four years.

According to my figures, there is as much net profit in a big crop of barley silage and a big crop of corn silage as there is in 10 tons of alfalfa hay; but unless we grow the alfalfa for the nitrogen, etc., we cannot have the large crops of barley and corn, and unless we rotate the alfalfa with some other crop like barley and corn we cannot continuously produce large crops of alfalfa. Therefore, I advocate rotation of crops with alfalfa.

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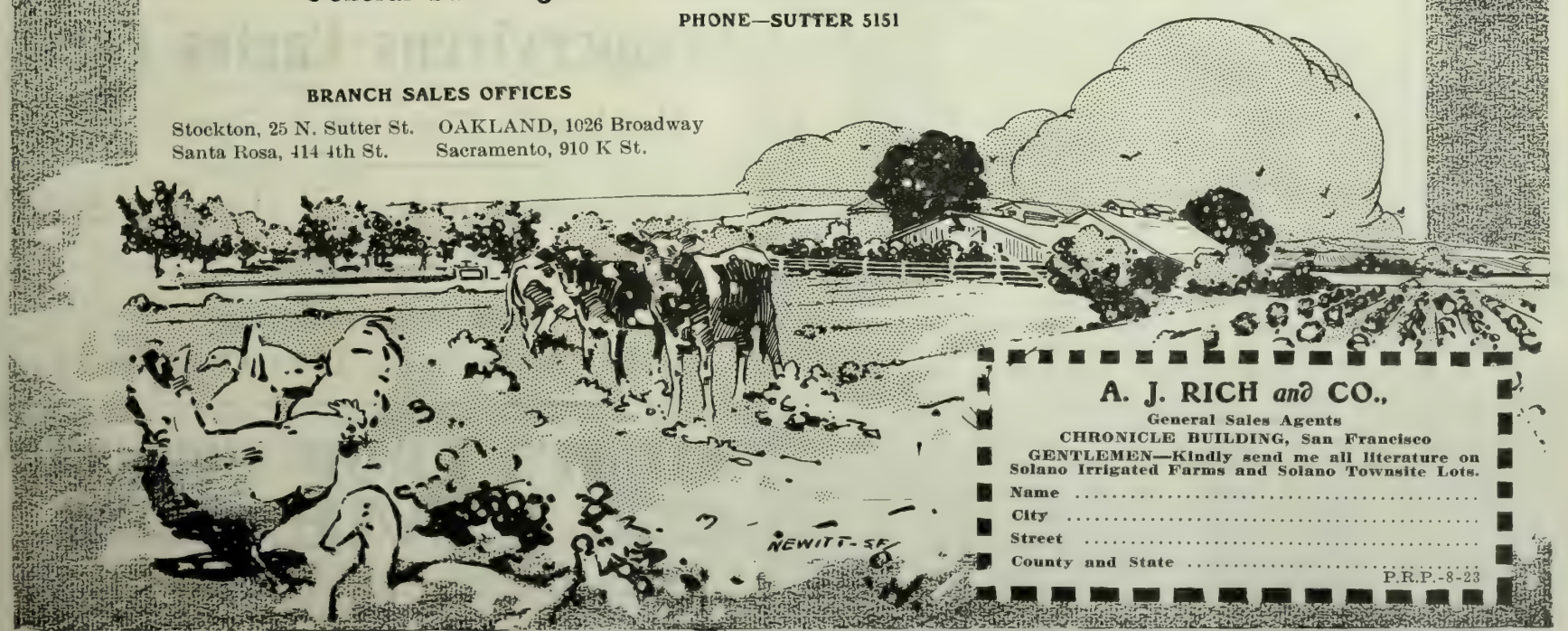

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Soils of the Orange Belt of Southern California and Their Treatment.

[Written for the PACIFIC RURAL PRESS by GORDON SURR, M.E., of San Bernardino.]

(Continued From Last Issue.)

SULPHUR.—Sulphur is also necessary and these soils contain sulphates in probably sufficient amounts usually, sulphates being also present in the irrigation water. The lime sulphate, gypsum, is an excellent corrective of black alkali but most of the orchards apparently do not need it, for this or for any other purpose, lime carbonate being generally much better than gypsum for these soils. Gypsum, as previously remarked, should, however, be used with nitrate of soda.

IRON.—Iron likewise is essential to plant life, although a very small quantity suffices, and an abundance of available iron is present in the soils.

MANGANESE.—The functions of manganese were not definitely known until recently, when, at the Eighth International Congress of Applied Chemistry, Professor Bertrand showed that manganese plays an important part. It seems that plants contain an organic substance called laccase, minute quantities of which cause the fixation of atmospheric oxygen, the activity of the laccase being due to its combination with trifling amounts of manganese. Manganese is, therefore, necessary, but evidently a little goes a long way. As I have only commenced to look for manganese since learning this, I am not able to speak from experience of the quantities generally present. Some analysis show its presence, and others its absence, yet oranges contain small amounts and it is found in most rocks and in some mineral waters. The minor constituents of soils and trees have not hitherto received the attention they merit for some are doubtless essential to full growth and production even though but infinitesimal quantities are required.

REACTION.—The soils of this orange belt are slightly alkaline, ground limestone being an excellent antidote for acidity, should any develop from the introduction and decay of organic material.

IRRIGATION WATER.—Analyses of samples of water, taken from the Santa Ana river above Mentone, show, on an average, 152 parts by weight, of anhydrous inorganic solid matter to a million parts of water. This solid matter contains 26.24 per cent of carbon dioxide, 23.81 of lime, 9.45 of sulphur trioxide, 6.63 of magnesia and 1.60 per cent of potash. A statute miner's inch is a flow of a cubic foot and a half a minute, consequently, one such inch of this water, running twenty-four hours, means 2,160 cubic feet, carrying in solution 5.37 pounds of carbon dioxide, 4.87 of lime, 1.93 of sulphur trioxide, 1.35 of magnesia and 0.32, or about a third of a pound of potash. These figures indicate the fertilizing value of the water and, as the above substances are in solution, they are of course immediately available.

FERTILIZERS.—The actual value of a fertilizer to the grower by no means necessarily increases with the market value nor does it follow, because a certain brand or mixture has apparently brought results, that it is the height of wisdom, or the most profitable plan, to continue its exclusive use. Fertilizers are too often employed in a haphazard, rule of thumb, hit and miss fashion regardless of their composition or of the nature of the soil or crop. With plenty of decaying organic matter in the soil, with raw phosphate rock thoroughly incorporated with the soil where phosphorous is needed, with ground limestone if required, and a little nitrate of soda when immediately available nitrogen is wanted, many citrus groves on these granitic soils would doubtless thrive without other fertilizing substances, providing the physical condition of the ground and the care in general were as they should be. In regard to the great direct, and indirect, value of decomposing organic material Dr. Cyril G. Hopkins remarks that "this must emphasize a fact which it is exceedingly important to keep in mind, when studying the data from not only the Rothamstead fields but from nearly all of the oldest soil experiment fields in America as well; namely, that practically no provision has been made for maintaining any adequate supply of decaying organic matter in the soil, in consequence of which, in the author's opinion, the soil itself becomes practically inactive, and, if satisfactory crops are to be grown, every essential element of plant food must be supplied artifically in readily available form." (Soil Fertility and Permanent Agriculture, page 366). Other authorities think likewise and, probably, the soils of some groves are not far off this miserable condition.

PHYSICAL CONDITION.—Obviously the best results cannot be expected from even a rich soil if physically in bad shape. A more or less impervious "plow-sole," for example, is detrimental for not only does it tend to keep water and fertilizers away from the roots, but also there is not the proper access of air which is necessary for nitrification and favorable bacterial activity in general. In investigating an orchard the writer found the plow-sole was the worst where mottled leaf was most in evidence, mottled leaf being an outward and visible sign of an unthrifty condition probably due to various causes, just as a headache may be brought on by many things. Recently microscopical worms (nematodes) have been discovered, particularly in the soil, among the roots of trees with mottled leaf, but it is not yet known whether these worms have anything to do with the trouble. Plow-sole can be broken up by careful blasting and by deep plowing, deep-rooting cover crops being also great aids in removing it and preventing its formation. Cultivation to different depths is good practice and the addition of limestone often checks the tendency of soils to pack. Owing to plow-sole, irrigation may be defective and every grower should have and constantly use a soil tube so that he can readily find out whether the water is reaching the roots properly.

BACTERIAL CONDITIONS.—For practical purposes soil bacteria may be divided into two groups, those that enrich the soil by getting nitrogen from the air or by making it available from other substances, and those that waste nitrogen by setting it free as gas from its compounds. We have, therefore, to deal with agents of good and evil and the former evidently should be encouraged and the latter suppressed as far as possible. Heating a soil to the temperature of boiling water for a couple of hours has doubled its productivity and treatment with such substances as chloroform, toluene and carbon bisulphide has resulted in a great increase of fertility owing to the destruction of harmful organisms. Dr. A. D. Hall, Director of the Rothamstead Experimental Station, remarks in this connection: "At present the processes have not been extended to the open field, but progress is being made in that direction, and gives some promise of a method by which ultimately the unseen fauna and flora or the soil will be domesticated, the useful race encouraged and the noxious repressed, just as the larger flora and

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fauna have been reduced to our service since the days when primitive man first turned from hunting to agriculture." (Harper's Magazine, March, 1913, page 567). A word to the wise is sufficient and the wise grower will keep close watch on developments along this line.

THE TREES THEMSELVES.—It is often easier to do wrong than right, and it is usually more trouble to get buds from good than from poor trees, the result being that many trees never will pay until they are rebudded. Here I cannot do better than quote from a letter from Mr. G. Harold Powell, dated December 14th, 1912, and addressed to "All Shippers." Mr. Powell calls attention to the important work done by Mr. A. D. Shamel, of the U. S. Department of Agriculture, and gives extracts from a letter written by Mr. Shamel who says in part:

"We also now have clear cut evidence of the practical possibility of rebudding successfully all healthy 'off' types. The replacing, by rebudding, of our 'off' or undesirable types, from carefully selected buds from select trees, will result in an increase in yield and a great improvement in quality. I firmly believe, as a result of our tests, that we can improve the yield in this manner fifty per cent and the quality in a like degree. In the lemon grove, from which these samples came, one of the most productive, for its age, in this State, not more than ten per cent are real "mother" trees of the standard type. 3000 out of the total 16,000 trees have been rebudded, the shade tree type. This will give you some idea of the proportion of inferior types. Many other equally undesirable type trees remain to be rebudded this coming spring. The variation in type of the Valencia orange on this ranch is much greater than in the case of the Eureka lemon. We have found eleven types of Valencias here alone, the most undesirable type, constituting twelve per cent of the total trees, an absolutely worthless fruit. In navels we have discovered seven types, and in the Marsh's seedless grapefruit variety, five types. Nurseries that have been propagated from select trees, based on performance records, and from buds of fruit-bearing wood, have produced the finest, most uniform lots of trees I have seen anywhere. I want to impress folks with the idea that they don't have to take any statements, as to variation in type and its importance in citrus fruits, for granted. They can demonstrate this condition in every citrus grove I have seen so far, by a little careful study for themselves. The necessity for applying the 'Babcock' test to individual citrus trees is as great as its needs in commercial dairying. Many growers are now keeping a record of every tree's production. One man, who has done this for three years, found only fourteen per cent of his trees producing profitable crops, forty-eight per cent were so poor in yield that they have been rebudded, and thirty-eight per cent are question marks and their fate undecided. Careful selection of buds is as important, I think, as careful handling of fruit, and they fit in well together in making citrus culture profitable and interesting."

Comment on the foregoing is wholly unnecessary.

CONCLUSION.—Suffice it to say in closing that a study of soils, involving as it does many considerations, can be but touched upon a brief article and it is, therefore, hoped that due allowance will be made.

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PASTING THE RED SPIDER.

H. P. Stabler, horticultural commissioner of Yuba county, has just issued a timely circular concerning the efficacy of a spray for the red spider recommended by W. B. Parker of the Bureau of Entomology of the U. S. Department of Agriculture. We gave the details of Mr. Parker's work in this line some months ago. Mr. Stabler's reminder and his additions are timely:

Cheap grade of flour, 8 pounds.
Water, 100 gallons.

Make the flour into a thin batter by adding a little cold water at a time until 8 gallons of water is used. Mash out all lumps.

Cook until paste is formed, stirring constantly to prevent caking or burning. Cooking slowly until the paste just begins to boil will usually be about right. If the paste is not sufficiently cooked, the resulting spray will not be effective, and if overcooked the paste will harden when thoroughly cool, and will not mix with water very readily. Commercial paste, ready for diluting, can be purchased if desired.

Add cold water to the paste, when done, to make 100 gallons in the spray tank. Keep constantly stirred while spraying. Apply thoroughly to both the upper and under surfaces of the leaves. Use a nozzle making a coarse spray under 150 lbs. pressure, as the driving force is necessary to penetrate the webs and reach the spider. A fine mist spray would not be effective. This is a contact insecticide and the liquid must actually touch the spider. The materials are cheap; apply liberally. Watch the plants carefully and if newly hatched spiders are appearing, repeat the spraying in about seven days. No spray will kill the eggs without injuring the vines.

On August 8th, William B. Parker made a demonstration of this remedy at Sunset, Sutter county. The paste was made and the spray applied to infested bean vines. Several well known residents witnessed the demonstration and saw the dead spiders on the leaves afterward. When properly made and applied, tnis formula will be found effective against red spider.

PRUNING UNIRRIGATED APRICOTS.

To the Editor: Growers seem to have concluded that summer pruning of the apricot tree has no lasting benefit, and I never practiced it; but in an extremely dry year like the present, with trees not irrigated and which begin to show it, I would like to know if early heavy pruning would strengthen a tree.—A. M., San Jose.

Summer pruning of apricots is most satisfactory in results in places where the wood growth is excessive because of high heat, and ample moisture and such pruning is usually desirable in such places. Summer pruning under other conditions is not desirable, or at least is not worth what it costs, for it has to be followed by a certain amount of winter pruning, which means going over the trees twice.

This state of affairs has little, if any, relation to the problem which you propose. As to that, we would say that if soil moisture is scant, you can reduce the loss of it somewhat by reducing the top of the tree and thus causing less transpiration of moisture. This can be safely done with trees which have practically finished their summer growth as manifested by changing color of the leaves and their becoming limp. Such pruning will prevent die-back and help the tree to pull through, unless the drouth should be too severe and too long continued. Of course, the best thing for such trees is a good irrigation, if the water can be had.

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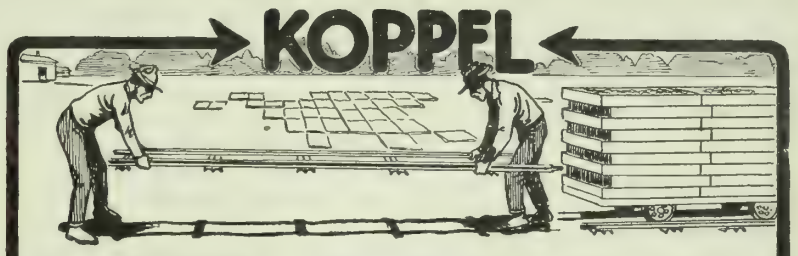

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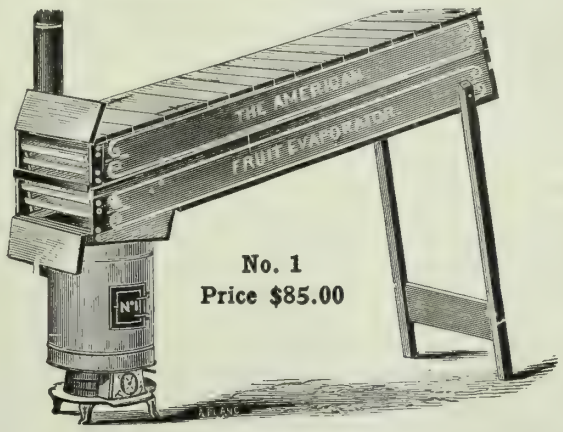

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AGRICULTURAL REVIEW.

FAIR MEN ORGANIZE.

A meeting of representatives from over the State was held at Pleasanton last week to organize the Association of California Agricultural District Fairs. A committee on by-laws and permanent organization was appointed, and upon report of the committee the following were elected as directors for the first year: I. D. Graham, A. G. Robinson, I. L. Borden, J. E. Dickinson, E. E. Hall, W. F. Price, E. J. Dolorey, W. J. Considine, who proceeded to organize and elected the following officers: E. E. Hall, president; W. F. Price, vice-president; W. J. Dakin, secretary-treasurer. The annual meeting will be held the first Saturday in February.

FAILED TO MAKE A CASE.

At the hearing of charges last week before Governor Johnson, against State Horticultural Commissioner Cook, the opposition failed to make a case and the Doctor was exonerated. It was agreed by those present to drop all discussion, wipe the slate and start anew that the fruit industry of the State may have the best attention that can be given it.

RAISIN PRICES FOR 1913 CROP.

Prices for 1913 raisins for the trade were announced last week by the California Associated Raisin Co., following the conference of its directors with the packers who are to serve as selling agents for the company.

The action of the company in fixing the price to the trade for 1913 raisins at this early date is expected to stabilize the market and give the trade in general the confidence that has been lacking for several years past.

The crown London layers are not quoted in the list of prices, as the company will not deal in this class of goods. The directors figure that by eliminating two-crowns and quoting three exclusively, the practice of the packers in the past of quoting low on two-crown to depress the market will be done away with.

The price-list issued to the trade for 1913 raisins, which will be known as Bulletin No. 5, reads as follows:

	16-oz.	12-oz.	Bulk.
Fancy	6¾c	5½c	6½c
Choice	6½c	5c	6¼c
	50-lb. cases.	1-lb. pkgs.	12-oz.
Sultanas	4¾c	6c	4⅞c
Thompsons	5½c	6¾c	5½c
4-crown, loose	5½c	....	....
3-crown, loose	5¼c	....	....
2-crown, loose	4¾c	....	....
1-crown, loose	4¼c	....	....

3-crown London layers	$1.30
4-crown London layers	1.50
5-crown London layers	2.00
6-crown London layers	2.50

Five and 10-pound boxes, the usual differential of 50c additional.

1-lb. cartons, 3-crown grade	$1.70
2-lb. cartons, 3-crown grade	1.70
5-lb. cartons, fancy clusters	2.00

Recleaned into 50-lb. cases, ¼c advance.

Floated seedless, ¼c advance.

Above quotations subject to change in price without notice.

Prices guaranteed against decline to April 1, 1914.

BIG IRRIGATION PROJECT.

The Spring Valley Water Co. made an offer last week to a committee of landowners to sell them the land and water to cover 50,000 acres in the southwestern part of the Santa Clara valley. The cost was estimated at $2,500,000, divided as follows: Land, 11,693 acres, $325,000; dam, $150,000; floodwater conduit, $60,000; tower, $20,000; pipe-line (installed), $1,500,000; other expense, $400,000. To meet interest, taxes, sinking fund and other charges, it is estimated that the cost per acre to the land benefited would be $4.75 per year for forty years. The lands to be covered by the district are located in the Campbell, Union, Los Gatos, and Saratoga sections.

AGRICULTURE IN HUMBOLDT COUNTY.

In traveling through Humboldt county one finds conditions varying a great deal. The Eel river valley, which is the principal one of the county, and its branches is devoted entirely to dairying and is considered one of the best dairy sections of the State. The grass is green nearly all summer and affords plenty of pasture for the cows. During the winter months they are fed principally upon beets and carrots, which take the place of the green feed.

The past year has been a very prosperous one for the dairymen of this section, as they have received top market prices for their butter-fat all season. The hay crop has been exceptionally good also, although the cutting season has been rather poor, a great deal having been lost from getting rained upon.

The dairymen are greatly favored by having numerous creameries throughout the valleys. The principal ones are at Ferndale and Eureka, with smaller ones about every three miles through the dairy sections. The milk is hauled to the creameries and tested and made into butter, which is shipped to different points.

Upon leaving the valley and going out into the mountains one finds the country devoted mostly to large stock ranches and small fruit farms. The southern part of the county, around Matole, is the principal fruit section. Apples, pears and berries of all kinds are doing well there. The only drawback is the unfavorable market conditions.

The northern and eastern sections of the country are devoted principally to cattle and sheep raising, and a very favorable season is looked for this year.—C. H. S.

WITH THE FRUIT MEN.

Practically all of the 1912 orange crop from the Pomona valley has been shipped. Prospects for the new crop are that 80% of the normal will be shipped during 1913-14.

Heavier shipments of Malaga grapes have been going out of the San Joaquin valley during the past week. The higher prices received in the East last week and the fact that Tokays from Lodi will soon be ready to ship has caused Malaga growers to rush their fruit to market.

The Dried Fruit Association of California has issued a circular appealing to the loyalty and the business sense of growers and packers to not attempt to pack and market the worthless prunes that dropped early, on account of being sunburned.

The Hemet cannery is rushing work in an attempt to handle the largest apricot and peach crop ever raised in that valley. It is expected that fully 300 cars of canned apricots and peaches will be put up by the cannery, all of which have been contracted to a Chicago firm.

Charles W. Mann, connected with the Bureau of Plant Industry of the agricultural department, is in Fresno superintending packing of green fruits in sawdust for Eastern shipments. Figs are to be packed in excelsior as an experiment.

A dispatch from Chico states that buyers are offering 5 cents for peaches, but that most growers are holding for 6c.

WOULDN'T IT BE FINE

If you could whenever desired and at an operating expense of less than 2 cents per 1000 gallons, apply water to your garden, orchard, or green house plants in the form of fine rain at the rate of an inch in less than four hours? All this can be accomplished by using the **Campbell Combination Oil Engine Pumping Outfit** and the

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Special Introductory Offer. Send us $2.00 and we will mail you postpaid sample of regular Brass Irrigation Sprinkler to any point in the United States with full instructions for installing and operating. Nickel Plated Sprinklers for lawn, park or cemetery use, complete with 4 foot stand pipe with connections for attaching to ¾ inch hose, delivered via Parcel Post or express $6.00. After November 1st price on regular Brass Sprinkler will be $3.00. **Our booklet, "Modern Irrigation," on request.**

J. P. CAMPBELL, Dept. B-3,
218 East Bay Street, Jacksonville, Florida.

References: Dun, Bradstreets or any bank in Jacksonville.

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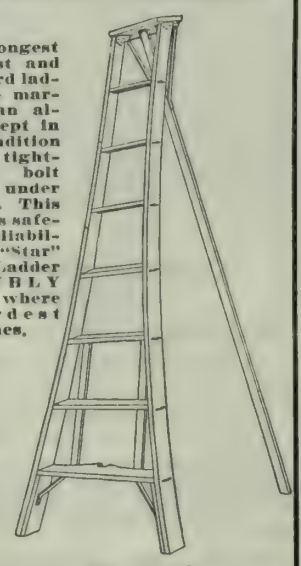

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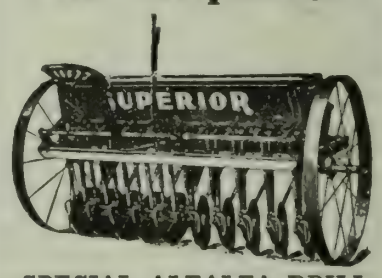

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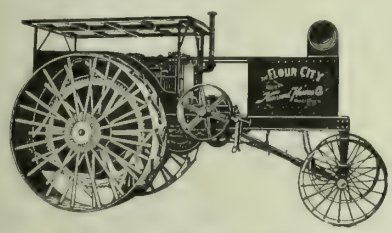

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Navels—Valencias—Tangerines
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F. H. DISBROW, Prop.

The crop will be short of what it was last year. Muirs will be the chief variety. The 5-cent basis for prunes is holding, and it is thought that 1,500 tons will move at that figure. The crop will not be much over half that of 1912.

The Stockton Independent says that buyers are offering $40 per ton for Phillips cling peaches, which will be a good crop and be marketed in September.

It is reported that the bulk of the 1913 prune crop of the Santa Clara valley has already been contracted on a 5-cent basis. Prunes from the irrigated orchards are sizing up well, while from the dry orchards the fruit is falling from lack of water and the size will be small.

The fruit crop in Shasta county is turning out to be better than expected. Alfalfa is also cutting heavier than usual. The work of packing pears has been rushed night and day at Anderson and will soon be completed.

Three carloads of prunes were shipped from Butte county last week, the destination of the fruit being Rotterdam, Holland.

Up to August 11th there had been shipped from Newcastle 1,014 cars of fruit, which was a gain of 128 cars over last season to the same date.

J. H. Heidorn, who has a farm west of Hanford, has propagated a new peach, which resembles an orange cling but is a freestone, and has good drying and canning qualities.

M. Vandervalden has established a nursery at Forest Ranch, Butte county. He expects to grow all varieties of trees that can be handled successfully in California.

A report of crop conditions of San Bernardino county received from S. A. Pease, horticultural commissioner, gives the following percentages in prospect: Oranges, 75% of a normal crop; lemons, 30%; grapefruit, 95; apples, 95; peaches, 95; grapes, all kinds, 95; pears, 95; prunes, 95; walnuts, 100; alfalfa, 100.

We learn that a change has taken place in the ownership of the Smyrna Park Nursery at Ceres. C. H. Hobart, of Modesto, has secured the interest of D. D. Campin, the new firm being Hobart & Moffett. Mr. Campin will manage a syndicate which will plant 1,000 to 1,500 acres on the Patterson ranch to pears.

The Orange News claims that the shipments of oranges and lemons from the section east of the Santa Ana river, from Olive to Tustin, this season, will bring to the growers $2,000,000. Only a comparatively few cars remain to be shipped and when the season closes, it is thought that it will be found the output of citrus fruit was 25% above that of last year. The great frost did but little damage to that section.

The Linden Cured Fruit Association was organized last week with a membership that controls about 200 tons of dried fruit per season. The Association will become a part of the California Cured Fruit Exchange.

The almond crop around Paso Robles will be a good one this season. The growers there expect to receive $14,000 for their crop. Many thousands of almond trees were planted in that section last season which are doing well.

The orange season will soon close at Anaheim, there being only a few cars of valencias to be shipped. It is stated that the output from that section will be in the neighborhood of 350 cars for the year.

W. F. and C. H. Prisk, two well-known newspapermen, have acquired 100 acres of land near Grass Valley which they will have set out to pears and plums the coming season.

FAIR STARTS AT WOODLAND.

As the Yolo County Fair did not start until August 20, we are not able to give an official list of entries in this week's issue. From all indications, the fore part of the week, however, the show itself looked to be good, as we were told that exhibitors of all kinds had promised to show and to aid in making it a success.

The livestock breeders seem to be exceedingly interested, and that end will more aptly show the counties' standard than any other one section.

In the swine division, the Oak Grove Dairy Farm and A. Brinton will exhibit their prize-winning Berkshires. T. S. Gibson, of Woodland, and T. S. Glide, of Davis, will show Short-horn cattle, and possibly the latter will exhibit some of his sheep.

The University Farm at Davis will bring over some Short-horns and Holsteins and it is expected that the A. W. Morris Co. will show a part of their high producing Holsteins. Interest is promised heavy horse fanciers by Ruby & Bowers, as they expect to show some stallions.

A. Brinton states that the horse show will be a pleasant surprise to everyone, as it will be far better than anything formerly attempted at a county fair. There are no doubt other exhibitors, and we will endeavor to give a more detailed account of them in next week's issue.

GENERAL AGRICULTURE.

Grasshoppers ate the twine with which a lot of grain sacks were sewed on the George Flock place, near Montague, last week, causing the loss of a good part of the grain contained in them.

The hop crop around Healdsburg promises to be very good this season. Picking will commence next week.

A dispatch from Washington states that the long drought and the intense heat of last week in the Middle Western States caused a loss in the corn crop estimated at 300,000,000 bushels. In parts of Kansas water was hauled by the railways to supply towns. Cattlemen are rushing stock to market in anticipation of a shortage of feed.

Walter Merchant, of Pixley, has recently started a cactus nursery on his ranch. He has secured a carload of spineless slabs to start with.

James Kinch, of Horkey Corners, Sutter county, reports a barley crop of 26 sacks per acre this season. He attributes the good yield in the face of a hard year to the double plowing he gave the land prior to planting it.

A mill to make and refine oil from cotton seed is to be established at El Centro this fall, which will be the first mill of the kind in the State. The oil will be used for cooking purposes.

Three hundred acres of tomatoes have been set out and contracted for in the section around Buena Park, Orange county.

MISCELLANEOUS NOTES.

According to an article in the Fresno Herald, there has been installed, during the past four years, in the San Joaquin valley from Merced south to Pixley, between 4,000 and 5,000 pumping plants. One firm in Fresno has put in 1,411 plants. During the past year most of the irrigating plants have been for alfalfa acreage.

The Medford 80-acre ranch near Riverbank, Stanislaus county, was sold last week to W. J. Davis of Los Angeles. It is stated that the new owner will put most of the land into alfalfa and then establish a dairy.

The 1280-acre Reed ranch near Auburn was sold last week to a San Francisco man. The new owner states that he will enlarge the acreage devoted to olives and, besides, set out many acres to pears. The irrigation plant is also to be enlarged to cover the whole tract.

Development of the 3,000 acres of what were known as the Gooch and C[illegible] ranches south of Red Bluff, is b[illegible] pushed rapidly. Besides subdivis[illegible] work, several large irrigation wells are being drilled.

Denman & Brownell are having 1,100 acres of marsh land near Suisun reclaimed and put into shape for subdivision.

Over 10,000 acres of the 20,000 needed have already been signed up for the proposed irrigation district near Tracy.

The State of California, for the first time in its history, will invest its surplus money in irrigation bonds, according to announcement made last week by Chairman Neylan of the State Board of Control. The board contracted to buy $9,000 in 5% South San Joaquin irrigation district bonds. The purchase was made possible through a law enacted at the last legislative session.

A step was taken last week in the organization of a reclamation district containing several thousand acres of fertile land in the northern part of Yuba county along the Feather river by the granting of a petition to call an election for trustees. The land has heretofore been in what is known as Protection District No. 10, but the property owners desired to reorganize under the title of reclamation district No. 10, so as to take advantage of the laws recently passed. The proposed district will comprise for the greater part Feather river bottom land, which is known as very productive. Reclamation will add a large area of valuable land to Yuba county.

Nathaniel Broyles was in Chico recently, telling how he saved his 23-acre almond orchard, two miles northeast of Cana, from destruction by grasshoppers. He imported 1,560 turkeys into his orchard, and inside of a week every grasshopper had disappeared and the turkeys, at first thin and frail, are now ready for companionship with plum pudding and cranberries.

Clark's Cutaway Double-Action Engine Disc Harrows

This Harrow Stands the Strain. Notice the Rigid Frame.

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CALIFORNIA STUMP PULLER CO., 704 Bryant St., San Francisco

Shelter For Swine.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The reason for providing shelter for hogs in most parts of this State is usually for an entirely different reason than in other climates, as it is heat here, rather than cold, that must be protected from, and rain rather than snow.

It is for this reason that our hog men have not, as a rule, provided much, if any, shelter other than rough sheds, but the better equipment era is beginning to be noticeable in the hog lots as well as elsewhere on the farm.

There are several reasons why some kind of hog shelter is needed at all times of the year. During the summer months some shade is almost a necessity, and especially so in any of our interior valleys, where the mercury can be depended upon to go pretty high. During farrowing season the need for some shelter is also apparent and greatly aids in the raising of large litters of thrifty pigs. While some may consider it unnecessary to provide winter shelter, one usually finds that the most successful hog growers have some form of shelter both for summer and winter use.

There are two distinct types of hog houses used in California, each having some advantages over the other one, and perhaps each one is fitted for a little different way of growing stock.

The Individual House.—This type of house is very popular, its advantages being that it is cheaply constructed, can be easily disinfected, is easily moved, and is both cool in the summer and provides ample weather protection in the winter. The most common way of making these houses is to build them along similar lines as the old-fashioned chicken coop with a pointed gable roof which runs to the ground on each side. By allowing ventilation through an opening in one end, and by leaving the other end entirely open, one has a good cool house. Many other plans are used, such as using 1x12 lumber for the sides to a height of about 6 feet and then allowing the roof to extend over three feet or more on both the ends and the sides. By having a wide cornice projection, such a house affords good shade in the summer and comfortable dry quarters in the winter. Floors may be put in either of these houses, as one sees fit, and runners made from two pieces of 2x6 nailed onto the bottom on either side, so that the building may be easily moved.

In most instances where the individual houses are used they are placed in fenced lots. These lots are of different sizes, but it is usually advisable to have them large enough to allow plenty of exercise room, for a hog without exercise will not be a good breeder. When lots like these are used, they are so located that they will all face one way, and by so doing, the feeding and watering is all done from the front.

If it can be said that there is any objection to this plan, it is the inconvenience encountered in feeding during rainy weather, as there is no roof over the feeding troughs, and not only the ground around the troughs gets muddy and unsanitary, but the job is a rather disagreeable one for the care-taker.

Combination Houses.—This style of hog building is not exactly new in California, and still there have not been enough of them in use for farmers to become familiar with the best plan to build from.

The advantages of this style are more perhaps for the man who expects to handle a good many hogs, for the expense of erecting is quite a factor.

Undoubtedly for convenience and health these houses are, if kept clean, the most satisfactory building, but if they are so poorly arranged that the cleaning up is hard to get at, they can become about the worst building imaginable.

There are a number of plans for this style, but about the best one we have seen in use was made to hold 24 brood sows, and also affords room for the mixing and feeding of feeds.

The floor of this building is 86 feet long by 36 feet wide, made of concrete and finished with a cement dressing. At one end a partition was put in 14 feet from the end, making a room 14 by 36, which is used for the storing and mixing of feeds. The balance of the floor space is divided into three sections, lengthwise, each 12 feet wide, making an alley 12 feet in the center for a feedway, and 12 feet on each side for pens which are cross-divided into pens 6 feet wide. An entrance from the feedway into each pen is made with a gate and an outside entrance leads from the pen outside into a fenced lot, which may be as long as one desires. The floor slightly slopes from each side to the center, where it is drained off into a nearby irrigating ditch. The roof is made on the gable style, coming down to within 6 feet of the floor at each side. This does away with so much lumber for the sides. An opening at both ends is left open, which allows plenty of light and ventilation.

By having the feedway in the center the troughs are all filled before the hogs are let out from their pens. After feeding, both end gates are closed and the pen gates opened, allowing the stock to eat on the cement floor. The chief advantages of this building are that it is convenient, can easily be disinfected with whitewash and easily cleaned by simply having water piped outside the building and hosing the floor.

The dimensions of this building could be made for two pens or a hundred, on the same plan, or could be made small and added to at any time.

Although hogs can be successfully grown without any house or shelter, for convenience sake it is usually deemed best to have some building, especially for brood sows.

Where no other shade is available it is a good thing to put up some kind of shade in the hog lot or field. While visiting the John Daggs ranch at Modesto, we saw such a contrivance made by setting four posts in the ground. By using these as a foundation, a thatched flat roof was made out of weeds, hay or straw. This roof was about 2½ or 3 feet from the ground, and made a very good shade at a small cost.

From present indications the hog industry of the State is still in its infancy, and more study both as to housing and feeding stock will be given from now on.

HOW TO FEED ALFALFA.

[Written for the PACIFIC RURAL PRESS by A. W. MORRIS & SONS, Woodland.]

[Last week an account was given by A. W. Morris & Sons, Woodland, of the method of feeding Tillie Alcartra, a record-breaking three-year-old, and the profits that were secured from her during her last lactation period. The following does not refer especially to purebred cows, or to cows of either great merit or small merit, but simply to the proper way of feeding alfalfa to cows of any kind to get the proper results, and thus will be an excellent statement for every dairyman. It will be noticed that alfalfa alone, just as we have said, is not thought best by these dairymen, whose results show that they know what they are doing. also that the method of cutting alfalfa is different than is generally practiced, or even recommended. —EDITOR.]

The general opinion among dairymen seems to be in favor of straight alfalfa ration as the most economical. This, however, has not been the case in our experience. The alfalfa alone is a very good ration, but is not a balanced ration, being somewhat lacking in carbohydrates.

We are favored in California with natural conditions which make it easy for us to produce the feeds necessary for a balanced ration. What is lacking in the alfalfa is provided in beets or corn silage, either of which can be produced in abundance, with irrigation on lands that will grow alfalfa. We believe a light feed of grain, such as ground barley, oats and bran, can be profitably fed, but in cases where these are not available, the roots and silage with alfalfa will be found a great improvement over the exclusive alfalfa ration. Would also advise feeding a small amount of grain hay with these feeds, as the roots and alfalfa alone have a tendency to be a little too laxative. The cows will not only produce more, but their physical condition will be better.

It would be practically impossible to estimate in dollars the difference per cow in the two rations. In our judgment, the greatest gain realized from the balanced ration is in the ability of the cow to continue to produce large returns from year to year. On the straight alfalfa ration a large year's production may be obtained at the expense of the cow's condition and, her vitality being reduced, she will likely return much less next time and a long rest will be necessary to again put her in condition.

Our experience in feeding cows for maximum production has demonstrated to us the importance and necessity of having the alfalfa hay put up in the right way. At times when we have found it necessary to purchase alfalfa hay, have looked through a great many lots without finding a single ton of first-class hay. We find that we can better afford to pay double the market price for hay cut and cured in the right way than to use hay in the condition that it is usually put on the market.

To get the best results we find that it is necessary to cut the alfalfa before any bloom appears and before the stem becomes hard and tough. Great care must be exercised in order to get it cured and in the barn without the loss of leaves. We always rake, shock, and haul our alfalfa in the forenoon and never handle it in the hot and dry part of the day. There will be absolutely no waste to hay put up in this way and it will have a much greater feed value. By handling in this way the tonnage of each crop will be somewhat reduced, but this will be more than made up in an extra crop or two, and we have a lot of excellent hay instead of a pile of worthless stems.

HOW TO RAISE SPRING LAMBS.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

As has been repeated stated in these columns, it is interesting to note the predicted change in the sheep-growing industry of California. Almost very large sheep-grower seems to be agreed that the present-day methods will gradually change and that in the future our mutton and wool will be largely produced by the smaller farmer, principally as a by-product. In a conversation with Frank Mechum, of Petaluma, we found that his views on this matter coincided with those of other breeders, and while he does not consider the present time quite ripe for the change in methods, he gave us the outline of a plan which would enable the alfalfa-grower to handle 100 or more head very profitably.

In the laying out of the feed-lots and sheep quarters, Mr. Mechum thinks that they should be so arranged that it will not be necessary to keep more than 25 head of ewes in one lot, and suggested as an example that 100 head of ewes were to be kept. For that number he advised fencing in a block of eight acres, to be cross-fenced, so that there were four two-acre fields. Directly in the center of these fields, or rather where the cross-fences intersected one another, the feeding-shed should be placed.

This building should be so erected that the center could be used for storing alfalfa hay, and the balance of the shed be divided into four enclosures, one leading to each field. Some kind of a special feeding-rack should be made which would catch the hay pulled out and thereby avoid a waste that would otherwise be too large.

With such an enclosure, the stock could be fed under a roof in damp or bad weather, and it also has the advantage of affording good quarters for the ewes at lambing season. This last-named advantage is one of the most important with the sheep industry, as the care given at this time is one of the main factors for the success of the undertaking.

Mr. Mechum stated that with such a plan as that outlined, he would suggest that 25 head of ewes, of some high-grade mutton breed, could be run in each two-acre field. These ewes would be bred about the first of April, so that they would lamb during September. By setting the lambing season at that time, the lambs should weigh 40 pounds at Christmas time, when they could be sold for spring lambs at prices ranging from 11 to 11½ cents per pound. By having the above described pens and buildings, the percentage of lambs would probably be close to 150 per cent, so that from the 100 ewes there would be 150 lambs to be sold, when four months old, for from $4.50 to $5 apiece. Just what the cost would be for feeding is hard to determine, due to the little experience with practical results that California sheepmen have had with alfalfa, but it seems to be the unanimous opinion that the wool from

well-bred ewes will pay for their keep, and that the cost of feeding young lambs would be very small.

The above opinion from a man of Mr. Mechum's standing in the sheep industry of this State should be of value, as he is admittedly one of the largest and best informed breeders we have. His present ranch consists of 25,000 acres of land, 5,000 acres being situated north of Petaluma and the balance south of town, part of which is on lower ground. Red Polled cattle, Merino and Shropshire sheep have been bred on this ranch for over 40 years, formerly by his father, but for several years, since his father's death, by Frank Mechum. Most of the home place is hilly land, which furnishes wild pasture the year round, and it is thought that it is due to this kind of feeding that bucks from this ranch do so well on ordinary range conditions. Mr. Mechum states that he has always run his sheep in this way, as he considered a buck that was used to roughing it had a much better chance of doing well when used as a breeder on rough range, than one which had been raised on alfalfa or mill feeds, as the latter, not being used to hard knocks, could not stand them.

There are about 5,000 head kept on this ranch, besides a good-sized herd of Red Polled cattle, and it has been the practice for years to purchase only the best of imported sires to breed from. Having been established so many years, the reputation of this breeder is so well known that his stock is pretty well sold out at all times. A new line of breeding has recently been started with Berkshire hogs, many of which are fine-looking individuals.

Breeding Horns Off Holsteins.

For some time past, experiments have been made as to the best method of breeding the horns off from cattle, and the following résumé, furnished the Rural New Yorker by Mr. Stevenson, is very interesting and instructive. In giving it, the writer states that it is a synopsis of an address delivered by Prof. W. J. Spillman, of the Department of Agriculture, pertaining to Mr. Stevenson's experiments with Holstein cattle, and goes on to say that "he at present is of the opinion that the polled trait in our various breeds of domestic cattle is probable due to the fact that in their origin from the wild breeds of cattle, three types were intermingled. First, the solid-horned type with the bony honeycomb interior structure, carrying an arterial circulation, that were rigidly attached to the skull. Second, the loose or dwarf-horned type, the horn consisting simply of the shells attached loosely to the skin so that they could be moved with the finger, and not fast to the skull. Third, the pure polled type."

Mr. Stevenson also thinks that a careful tabulation of the results in his herd will result in the discovery of some principle not now understood, which will enable breeders to forecast the qualities and characters which will result from any mating. He has had experience of 30 years with a herd of grade Holsteins, and he now believes that a concerted effort on the part of Holstein breeders would result in establishing the hornless trait universally in the breed. He also thinks this can be done without sacrificing the dairy qualities in any way, as his own cattle without horns are of high dairy quality, and from good families of the breed. Mr. Stevenson started his herd by securing every naturally polled Holstein that he could learn about. They were all good individuals of good pedigree and satisfactory performance. This is an interesting thing to all Holstein breeders, for without question most dairymen realize that the horn is of little if any practical use to a dairy cow, and it could be bred away, without lessening the actual dairy value of the individual, there would be a distinct gain for the breed. The following extract is taken from the paper which was read by Prof. Spillman, before the Polled Jersey Cattle Company.

"Where one parent is cross-bred and the other pure polled, half the calves are pure polls and half cross-breds. Where one parent is cross-bred and one pure horned, half the calves are cross-bred and half pure horned. But where both parents are cross-bred, we get the surprising and interesting result that one-fourth of the calves are pure polls, one-half cross-bred, and one-fourth pure horned. Herein lies the hope of the breeder who is trying to get rid of the horns on a horned breed. He can, by using a male of a polled breed, get any number of cross-breds. Then by mating these cross-breds, one fourth of the progeny will be as pure polls as if they never had a horned ancestor. When once a pure polled animal is secured, he will never get a horned calf, no matter what cow he is bred to. But a cross-bred is of great value. By mating him with horned cows, half the progeny will be cross-breds. These cross-breds can then be used in producing pure polls.

"It is therefore possible for the breeders of polled Jerseys to introduce into their herds the best blood of the Jersey breed. If the blood thus introduced carries the horn character, the polled calves resulting will be cross breeds, but from them can be obtained pure polls carrying the best blood of the breed.

"A very important practical point to the breeder of a new polled breed is how to tell a pure poll from a cross-bred poll. This is fairly easy in the case of males, but less so in the case of females. In the first place, if the animal has scurs, even minute ones, it is cross-bred. If it has no sign of scurs it is probably pure polled, but this point has not received sufficient investigation to render it certain whether cross-breds always have scurs. I think it is probable that they do. If so, then we have an infallible means of deciding whether a polled animal is pure or cross-bred with reference to the poll character.

"In the absence of definite knowledge on this point there is still a way to settle the question whether a given animal is pure polled or cross-bred polled, especially in the case of the males. It should be remembered that a pure poll never gets a horned calf, though his calves may have scurs if the cows had either scurs or horns. On the other hand, if the male is a cross-bred pole, whether he has scurs or not, half his sperm will carry the horn character. Hence, if he be mated to horned cows, about half his calves will be fully horned. On the average of a large number of cases it will be almost exactly half. It depends on whether the eggs of the horned cows are fertilized by one or the other kind of sperm, which the male produces in equal numbers.

"A practical rule, therefore, for determining whether a young polled bull is a pure or a cross-bred poll is to mate him, say, to a dozen horned cows. Even if the breeder does not have the horned cows, his neighbors will usually have them and will gladly lend them to this experiment. If a dozen calves thus produced are all polled, or have only scurs, then the chances are over 4,000 to one that the male is pure polled, and this will make it safe to guarantee that he will never get a calf having anything more than scurs. Such a tested bull, to a breeder of a new polled breed, should be valuable."

NEW LAW FOR PASTEURIZED MILK.

Below will be found Ordinance No. 2098 of the city of San Francisco regulating the pasteurizing of milk, defining same and regulating the method under which the same shall be produced, which should be of interest to those who are supplying sweet milk for San Francisco delivery:

Section 1. Pasteurizing milk is hereby defined as follows: To be the heating of every portion of the milk to not less than 140 degrees Fahrenheit, maintaining same at that temperature for at least 20 minutes and immediately cooling the same to at least 45 degrees Fahrenheit.

The use of this term shall be limited to milk produced and sold under the following conditions:

A. Any person, firm or corporation desiring to produce pasteurized milk for sale in the city and county of San Francisco shall make application to the Department of Public Health, on blanks provided for that purpose.

B. A permit shall be granted by the Department of Public Health if it appears upon investigation that the pasteurizing equipment installed is such that 99 per cent of all bacteria and all pathogenic bacteria are killed in the milk treated therein at a temperature of not less than 140°F. maintained at that temperature for twenty minutes. Further, that the pasteurizing apparatus is equipped with a recording thermometer of such a type that the same may be kept locked by the Department of Public Health.

C. The thermometric record of all pasteurization of milk shall become the property of the Department of Public Health and shall be collected by its authorized representatives.

D. Milk intended for pasteurization shall conform to the following requirements:

It shall be the product of a dairy rating not less than 60 per cent on the score card of the Department of Public Health.

E. All pasteurized milk shall be plainly marked on each bottle or other container in which such milk is delivered to consumers with a label bearing the inscription, "Pasteurized Milk," together with a serial number.

F. All utensils used in the production and handling of pasteurized milk must be properly cleaned and sterilized each time before using, and shall be so constructed that all parts are absolutely free from places where milk can accumulate or soak in so that it cannot be removed by simple washing, and the surface coming in contact with the milk or cream must be smooth and free from rust.

G. Pasteurized milk shall be delivered to the consumer not later than 24 hours after pasteurization.

H. Milk once pasteurized must not be re-pasteurized.

I. Any violations of the regulations for the production of pasteurized milk shall result in a revocation of the permit to produce pasteurized milk for sale in the city and county of San Francisco.

SENSIBLE PIG FEEDING.

The following method of growing pigs, taken from Farm and Home of London, England, outlines in a practical way a system of raising and fattening swine which in the main applies to California conditions. Instead of grass pasture spoken of, alfalfa pasture fills the bill excellently in this State, and by having a small feed grinder the whole plan is a fine one for realizing profits from the hog lots.

"Practice has taught that if wheat bran be mixed with maize meal the pig will be kept in a more thriving condition, and, as a rule, the pork will come cheaper than on the meal alone. In fact, it has been found that the old way of keeping a pig in a small filthy pen, and giving him but little to eat except fine ground maize, is far from being the most economical or the best way to produce good healthy pork. In the first place, it is not natural to keep a pig in such confined quarters, and in the second place maize meal, given by itself, will not digest well, because it lies in the stomach in a mass so compact that the necessary liquids to hasten digestion do not readily mingle with it; thus the pig not only loses its natural health, but fails to convert the meal into pork with any economy.

"The pig naturally craves some fibrous material like grass, and while he will not fatten on it as readily as on meal, he keeps in a more healthy condition. But this method does not apply to the many who would like to keep one or two pigs to furnish pork for their own table. There is a way which careful experiments have proved that pigs can be kept healthy and economically, which is within the reach of very many. This method is to cut grass up fine and mix with meal; this is found to save large quantities of meal, and keep the pig in a growing healthy condition, and very much reduce the cost of the pork. To produce pork with the greatest economy, the pig should be killed before cold weather, because it requires more food to make a pound of pork in cold than in warm weather.

"The best pork for family use is from small pigs that have grown quickly and always been healthy; fortunately, these are the pigs that furnish the pork the cheapest."

Benefits and Disadvantages of Fairs.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

There is more or less argument every year as to whether it pays the breeder to exhibit at the Fairs, some claiming that it is considerable expense, and oftentimes, as with hogs, injurious to the stock.

Still, in the face of this argument, which has many advocates, the number of purebred breeders exhibiting at the Fair are increasing in numbers each year, and they in turn have good reasons for attending.

Taking up the arguments for not showing, they are different with the different classes of live stock, hog men claiming that in order to show, one should have a herd especially for that purpose, as at the present time a hog which is not overly fat has very little chance of winning and that by doing this one is apt to greatly injure the breeding qualities of the hog.

Dairy men opposed to showing consider that the same amount of money and energy given the show could be more profitably spent at home by testing.

Beef cattle men and sheep men opposed to showing seem to have about the best argument—they claiming that the expense of fitting and feeding a show string costs a great deal more than the returns will warrant.

No doubt many of the above objections are well founded and do keep a great many from showing.

Those who do exhibit have different views of the benefits derived, but, as a rule, an erroneous idea prevails that it is simply for the cash prizes.

We have talked with a great many breeders on this point, and the opinions of the following seems to be the general opinion of all breeders who show.

A Jersey breeder who has been a consistent exhibitor at the Fairs, stated that the main reason he went was to sell bull calves, as he could sell more in a short time there than in any other way. The next reason in order is that, as an educational factor, he is able to acquire a great deal of knowledge as to the defects of his herd, or of his breeding, by having his stock in competition with the best stock other breeders can show. Besides this, he finds that the Fair puts him in touch with prospective buyers, greatly aiding him during the balance of the year, from a selling standpoint.

In regard to the prizes, he only figures on getting enough from that source to partly or wholly defray the expenses. While it true that heretofore very little credit has been given the owner for production, this year's premiums will amount to a total of $750 for butter-fat results.

While testing is always advisable, many times one can go to the Fair when it would be impossible for him to do official testing.

With the hog men, the one objection of fitting too much is well founded, but, judging by talks we have had with breeders on the subject, exhibitors will not pile more flesh on a hog than he can handle, as they sometimes have heretofore. There is at present a vast difference of opinion as to how fat a show hog should be, but no doubt the breeders will sometime get together on this and devise some way whereby one does not take advantage of the other.

Aside from this objection, the State Fair is a very profitable and educational institution, for the advantages are the same as for the dairyman, and we know of one breeder who sold 60 head of bred gelts last year during the one week, and all of them at good prices.

Beef cattlemen, sheepmen and horsemen are all to a much larger expense than the dairy cattle or hog man, but the results are the same, namely, to stimulate buying and breeding of better stock and the general educational factors for the breeder and general layman.

While a show cow may not always be the best producer, the beef bull, hog, sheep or horse that gets inside the money is pretty certain to be the best individual to purchase, as the man who has judged them is an authority along stock lines and can quickly discern any faults in an animal, quicker than an ordinary person can. His advice can also be had as to what features of an animal can be improved upon.

Finally the Fairs may be said to be well worth the breeders' time and expense, as it not only gives him better ideas of his own stock, but also puts him in touch with other breeders and a wider knowledge of his own breed.

As pointed out, the Fairs may have ob-

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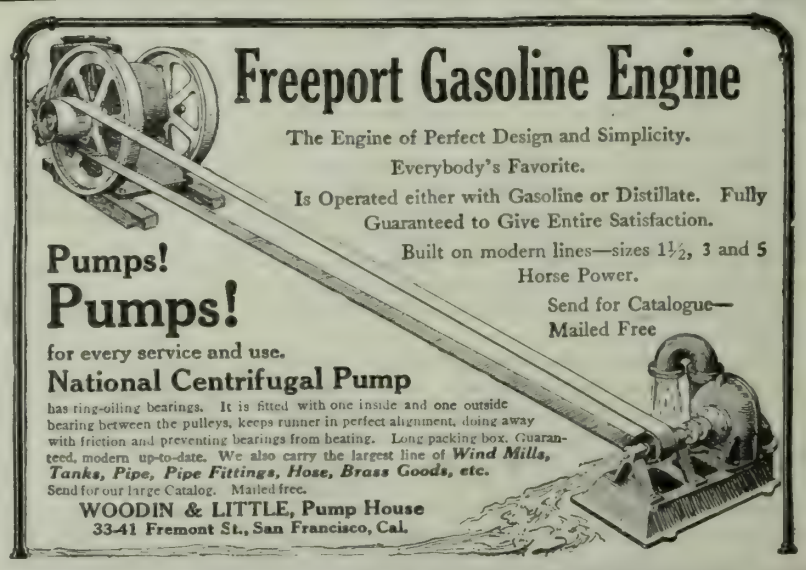

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PAICINES RANCH CO.—Breeders of Registered Percherons and Short-Horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

jections, but the good that results from them is worth the effort, both of the breeder and the ordinary stockman who are interested in the advancement of better stock.

MORE GOOD SHROPSHIRES.

The following communication to this journal, from J. E. Ballard, who is shepherd for Bishop Bros., San Ramon herd of Shropshires, is of interest, inasmuch as it tells in an interesting manner how the Shropshires on this ranch compare with those of foreign breeders.

It also shows the confidence the owners have in the future of the sheep industry of the State, at a time when some are climbing out of the industry as fast as possible.

To the Editor: I have just arrived at San Ramon, after my long trip to England, which has been a very interesting one. I managed to secure for Bishop Bros, a few good sheep.

I did not go with the intention of buying show sheep, nor did I buy any, for I think our flock is as good as anything I could buy in that line, but I secured 20 of the best breeding ewes that money could buy and a few yearling rams, also two excellent rams for J. Marshall, of Davis.

The ewes were bred by Lord Cavendish of Holher, Lancashire. They are the cream of his flock, and this will be the last chance of picking from this flock, as it is to be entirely sold out in September, and the whole of the estate rented out in small portions.

This flock has produced more high-class sires than any other flock in England, so we feel doubly proud of our purchase.

The Bishop flock still looks good to me, and I am sure that I have greatly strengthened it with these new ewes and by the addition of two stock rams, one of which I hope to be able to show at the Sacramento State Fair.

We have a nice lot of young stock on hand at present, including about 20 yearling rams and 30 yearling ewes, also an extra nice lot of ram lambs. So far we have been very successful in pleasing our customers and hope to be able to continue to do so.

Yours for better-bred Shropshires.

San Ramon, Cal. J. E. BALLARD.

THE HANNA SHORT-HORN SALE

The Short-horn breed lost a very valuable man from its ranks when D. R. Hanna closed out 102 head at his sale in Chicago, July 29 and 30. The average sale price was $305, and included such famous individuals as Villager, the well known show bull, and the noted imported bull, Champion of England. Some of this herd was brought to California last winter and will no doubt be of great value to California Short-horn ranks.

In a communication received at this office, John Garden, for years manager of Mr. Hanna's Ravenna farm, he states that he has formed a partnership with Mr. A. O. Weaver of Wapoto, Iowa, and purchased at the Hanna sale all of the very best breeding cows and the bull Villager, with which to head the herd. He also states that he wishes to inform the California customers that he made through his advertisement in the PACIFIC RURAL PRESS last year that the same hospitality will be shown on the new farm that was always so much in evidence on the Hanna farm.

Duroc Jerseys

My herd won Duroc Jersey Association's Special Prize at 1912 State Fair. Will have some fine young stock, both sexes, at the Fair this year. Be sure to see them before buying.

ED. E. JOHNSON, Turlock, Cal.

ADVANTAGES OF IDEAL GREEN FEED SILOS

The Ideal Green Feed Silo is manufactured to meet all climatic conditions of the Pacific Coast States.

It is a wood stave silo, manufactured from clear Redwood or Douglas Fir, of selected tank stock.

It has been proven and demonstrated by the different agriculture experiment stations, that silage will keep much better in a wood stave silo than in a cement or stone silo.

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REGISTERED BERKSHIRE BOARS, sired by Silver Tip Duke and Third Masterpiece. V. A. Peterson, Blacks Station, Cal.

REGISTERED DUROC JERSEY SWINE Some extra good young boars for sale, ready for service. Best Eastern strains. Ed E. Johnson, Turlock, Cal.

REGISTERED BERKSHIRE SWINE—Best Eastern strains; bred sows and spring pigs for sale. A. B. Humphrey, Mayhews, Sacramento Co., Cal.

REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

350 BIG TYPE MULEFOOT HOGS for sale; they are the best for the Pacific Coast. John Dunlap, Williamsport, Ohio.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

EUCALYPTUS STOCK FARM—Registered Duroc Swine and Holsteins; prices right. J. K. Fraser, Denair, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroghbred Berkshires.

FAIRVIEW STOCK FARM—Reg. Poland-China hogs. W. A. Young, Lodi.

CHAS. GOODMAN, breeder of High-Class Berkshire Swine. Williams, Cal.

E C. RAND—Registered Berkshires. R. 3, Box 69, Santa Rosa, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

O. I. C. SWINE

The Big White Hog

Have a few nice young boars left of February and March litters. Sold out everything else. Am taking orders now for weaned pigs to farrow in August, September and October. These will be from large, aged and tested sows, bred to big, heavy-boned boars. Write your wants. Will have a small showing at the State Fair this year. Call around and see what they are.

C. B. CUNNINGHAM, Mills, Cal.

My hogs are recorded in the National O. I. C. Chester White Record Ass'n.

Shipped from LOS ANGELES, PORTLAND or SAN FRANCISCO at same prices.

GROCERIES, tents, engines, pumps, furniture, paint, wagons, harness, etc., at Factory prices.

Write for free catalog.

OLD HICKORY SUPPLY CO.
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HOWARD CATTLE CO.

Breeders and Importers
SHROPSHIRE SHEEP
SHORTHORN CATTLE
BERKSHIRE HOGS
326 Sharon Bldg., San Francisco.

REDWOOD TANKS

I sell to the consumer. Box shook and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon tanks, Spraying tanws. Independent.

R. F. WILSON, Stockton, California.

Blake, Moffitt & Towne

Dealers in PAPER

37 FIRST ST., SAN FRANCISCO
Blake, Moffit & Towne, Los Angeles
Blake, McFall & Co., Portland, Ore.

With the Livestock Men.

That Stanislaus county dairymen have profited by building up their herds is forcibly shown this year by the large number of dairy cows being shipped from that county. From one to three cars a week are now being shipped to Oregon, Washington, and other Northern points. While the shipments have been large, the year's output will doubtless prove large, as much better stock will replace that which is being sold.

W. M. Carruthers, livestock buyer of San Francisco, left during the week for the East, where he will purchase several carloads of stock with which to fill coast orders. He stated that he will likely be gone thirty days and will visit breeders in Iowa, Illinois, and Missouri.

That California is not the only State affected by drouth this year may be seen in glancing over the trade reports from the Middle West. The Chicago cattle market is said to be overrun with thin and half-fat cattle from Kansas, Missouri, and Oklahoma's burned pastures, and also that the Southwest and Northwest are shipping large quantities of poor stuff on account of feed shortage. Buyers from the Coast are said to be getting in on the Montana trade for the first time in history and will no doubt handle 50 per cent of that State's stock this year.

Figures for the estimated wool clip of Oregon show that for the year 1913 but 16,300,000 lbs. were produced, as against 18,700,000 lbs. last year and 18,900,000 lbs. two years ago; and also that the net valuation has decreased from $3,000,000 last year to about $2,080,000 this year. Good mutton prices this year, however, have helped a great deal to balance up the income from the sheep industry of the State.

California's Fair circuit started this week with the Yolo county fair and will create a great deal of interest among stockmen for the next two months. A glance through our livestock advertisements will show you where high-class stock of all breeds may be purchased, and as a great many of these breeders will be exhibitors at the fairs, you should in justice to yourself visit one or more fairs and select your future sire.

Blevin Brothers, of Arbuckle, Colusa county, secured judgment against Pat and John Mullally, during the week, because the defendants had allowed their cattle to run on the plaintiffs' unfenced sheep pasture. This is an application of the principle of the old common law which provides that an unwarranted entry on another's soil entitles a trespass and will make the law clearer in this State as to what rights a pasture owner has.

The scarcity of feed does not seem to be greatly affecting the price of beef stock, one sale of five head being purchased at Kings City for $350 by McKeon and McKinsey.

T. S. Glide, proprietor of the Hillcrest Stock Farm at Davis, states in a letter to this office that he will show his stock at the State Fair next month as usual. He further says that he will show some Dorset sheep, this being the first time, he thinks, that this breed has been represented at a California State Fair. If they arrive from the East in time for the Fair, a good showing is expected, as the yearling ram was first at the Royal last year and the ewes were first at Bath and West shows this year.

Beef buyers from Los Angeles are taking advantage of the high price of meat this year by purchasing all of the available feeders in the south San Joaquin to be fattened on beet tops. Part of this stock will be fed in the beet fields near Tulare and part of them in the southern part of the State, the tops being purchased at 20 cents per ton, which gives a very good feed at a reasonable figure.

The hog industry of Imperial valley is still on the increase, and growers in that section are marketing good-sized quantities of hogs at 8¼ cents. The climatic and natural conditions of this valley make it ideal for pork production, and the county owes a great deal of its prosperity to the hog industry.

J. W. Rogers, of Willows, is branching out into the pure-bred Short-horn business, having now on the way 20 registered cows and two registered bulls. These cows are of exceptional high breeding and will add materially to the Short-horn wealth of California. Mr. Rogers is building up one of the largest breeding establishments in California. His new feeding barn, nearly finished, is over 200 feet long and 60 feet wide. Mr. Rogers is an Eastern man, having learned the beef business there, so we predict a successful career for him here.

Mr. Thayer, a San Franisco business man, recently branched out in the Short-horn line, purchasing 15 head of yearling heifers from the Hopland Stock Farm at Hopland owned by A. W. Foster. To head this select bunch of heifers he has secured, through the services of W. M. Carruthers, a beautiful young bull sired by Village King, his dam being a daughter of Avondale. If breeding and blood counts for anything, this young bull should make a mark for Mr. Thayer in the Short-horn breed on this Coast. On his other farm at Willets he is branching out in the registered Holstein business, and has on the way from the East a number of cows and a splendid bull to head them.

The big packers of Chicago are predicting that the price of mutton cuts is certain to reach 40 cents a pound this winter as a result of the drought in Kansas and the Southwest.

At the auction sale of B. F. Ambunis of Tulare, his bunch of Durham dairy cows averaged $64 per head, one going for $101. The hogs sold also brought good prices, but not as good as was expected.

A new exhibitor of Short-horns at the Sacramento Fair is promised in Mr. Hawkins of Hollister, who expects to show five or six head, among them a two-year-old bull that was first at the Nebraska State Fair last year.

The Portland Union Stock Yards had a fairly heavy run last week, and prices remained steady for top grades. Hogs were considerably off. Prices for steers averaged from $7.25 up to $8.35; cows from $6.25 to $7; bulls, $5.50 to $6; hogs, $8.50 up to $9.30; lambs, $5.75; ewes, $3.85, and wethers $4.

Nine Kings county creameries paid to dairymen last week $145,000 for July deliveries of butter-fat.

At the Hahey ranch auction sale, held near Tulare last week, 173 head of grade dairy stock were sold at prices ranging from $67 to $100 per head.

The Tulare creameries disbursed $91,600 last week for July butter-fat, being a gain of $12,000 over the July pay-day. Prices for butter-fat were about 2c per pound higher than for June.

California State Fair

Sacramento, California

September 13-20, 1913

WILL BE THE GREATEST SHOW OF HIGH BRED LIVE STOCK EVER EXHIBITED ON THE PACIFIC COAST

Premium List has been enlarged so as to take care of a larger number of classes, and in some instances materially increased.

Especial attention is called to the fact that a liberal increase has been made in classifications and premiums on dairy products.

The Poultry and Pigeon Department has been revised and an increase has been made in premiums. In Pigeon Department no first premium will be less than $1.00; no second premium less than 50c.

A classification has been made for market culinary animals, providing premiums for rabbits and hares.

There has also been established boys' judging classes, and the sum of $400.00 set aside for premiums for boys who prove the best judges of live stock.

Premiums are provided for the best displays of Indian corn and spineless cactus.

Premium list is now being prepared. Send in your name now, to be placed on the mailing list.

ADDRESS, J. L. McCARTHY, SECRETARY,
State Agricultural Society,
Box 592, Sacramento, California.

A. L. SCOTT, President.

20 REGISTERED JERSEY BULLS

READY FOR IMMEDIATE DELIVERY

Sires by such bulls as King's Valet, who is conceded to be the best show bull and sire on the Pacific Coast. All of these young bulls have been bred and raised on our farm and carry the reliable Locke guarantee. Prices are reasonable and stock of the best breeding. Do not buy a bull until you have received prices and pedigrees of this stock, or, better, pay our ranch a visit. We exhibit every year at the State Fair for the benefit of our buyers, so be sure to visit our quarters during Fair week and to ship home a sire rich in the blood of our famous herd. Correspondence solicited.

Herd Bull, King's Valet, Gold Medal Senior Champion Bull at State Fair last year.

N. H. LOCKE CO.

Lockeford, California

CHOICE CHEAP CONCENTRATED

MODESTO ALFALFA MEAL

FOR

CATTLE POULTRY SWINE

FOR PRICES SEE OR WRITE

THE GRANGE CO., Modesto, Cal.

1st Prize Ram Lamb, Omaha, 1911

SAN RAMON SHROPSHIRE FLOCK

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.

CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.

OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.

INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS.,

San Ramon, Contra Costa County.

The Profit in Heavy Horses.

We suppose that the talk about a need for heavier and better horses is almost overdone already, but the following coming from Wayne Dinsmore, secretary of the Percheron Society of America, is worth more than similar talk from another person of less prominence and experience.

For two years past, draft horses have brought better prices and there has been a greater demand in proportion to supply, than in twenty years.

Number one geldings, weighing 1700 pounds or over, of good draft type, and full age, with well set legs and durable feet have averaged around $350 per head. Pairs have brought from $750 to $800. Good draft horses bring more in pairs than singly, provided pairs are well matched.

COUNTRY WANTS MARES.—The chief country demand is for draft mares, because they can do the farm work and at the same time, produce colts. Prices on good grade mares from 1500 to 1600 pounds range from $200 to $300 per head. The average for grade mares in foal is from $250 to $285. These prices are high enough to leave a satisfactory profit to the breeder of grade draft geldings and mares.

DRAFTERS SCARCE.—The fundamental reason why draft horse prices are at a profitable point is that the supply is unequal to the demand. Less than 20 per cent of all the horses reaching Chicago, the greatest horse market in the world, weigh over 1600 pounds. About one-fourth of these are No. 1 drafters. In simple words, only about five per cent of all horses reaching the market are of approved draft type, weight and soundness. Another reason: less than one-fourth of the horses on the farms will weigh, at maturity, 1600 pounds or over, and not more than one-third of these are of first-class breeding type, conformation and soundness.

The demand is far in excess of the supply and prices are at a point where satisfactory returns are sure to accrue to the breeder.

CITY DEMAND CONTINUES.—The auto truck will not materially affect the market for draft horses. Auto trucks are here to stay. They are extensively used in the city and will be more extensively used in the future, but investigation shows, conclusively, that in hauls under three miles, particularly under crowded traffic conditions, the auto truck is less efficient than the horse. The auto truck is supplementing rather than displacing the horse. It is more efficient than draft horses on long hauls and straightaway runs to branch houses, distributing points, suburban stores and nearby villages. But experience in Chicago, New York and other cities proves that on short hauls, under a three-mile radius, in crowded traffic, the team is the most efficient. Eighty per cent of the traffic in our large cities is within a three-mile radius, therefore auto trucks will not materially affect the city market for draft horses.

Not a single State in the Union is producing horses on one-half its farms. Iowa, the leading State, produces horses on but 42.6 per cent of its farms. This means that even in the leading horse producing State more than one-half the farmers must buy horses from neighbors who will breed before there is any surplus for sale off the farms.

MEN MUST EAT.—Between 1900 and 1910 the population of the United States increased 21 per cent. During the same time cattle decreased 8 per cent, hogs 7 per cent, sheep 14 per cent. Horses increased, but only 8 per cent. Now, any one acquainted with agricultural conditions knows that a decrease in cattle, sheep and swine means an increase in tilled land. An increase in tilled land means an increased demand for horses. Our population has increased more rapidly than our production of foodstuffs. This, combined with the reduction in the production of meat animals, has been one of the most important features in increasing the high cost of living. The high prices received for farm products have focused attention upon increased yield per acre. Land has increased in price. To pay satisfactory returns on investments in farm land, increased yield per acre is absolutely necessary. This increased yield per acre can be obtained only by the liberal use of farm manure or fertilizers, or both. An increased yield per acre also requires more thorough plowing, more thorough preparation of the seed bed, more thorough cultivation of farm crops and higher efficiency in harvesting. Wages have increased, yet help is difficult to obtain on the farms. This condition has rendered necessary the employment of modern farm machinery, which requires less manual labor, but more horse power. All these factors have combined to make necessary the employment of more horses on our farms.

HEAVY HORSES WANTED.—Experience has demonstrated that draft horses are much more effective in modern farming methods than lightweight horses. In addition, lightweight horses are low inprice, and the supply is far in excess of the demand. There is therefore no incentive to use light horses on farms, for they are not only less efficient in the farm work, but the surplus cannot be sold at satisfactory prices.

You cannot go wrong in investing in draft horses. Present prices are good and demand far in excess of the supply. The amount of breeding stock from which to produce more draft horses is so limited that there is no prospect that the supply will overtake demand within the next 50 years. Our population is increasing at a rapid rate. Food and transportation requirements will increase more rapidly than our means of supplying same.

The man who invests in draft horses for work is making an investment that is as certain to yield returns as an investment in United States Government bonds, and intelligent management will make possible far greater returns.

HEIFERS AND BULLS FROM A. R. O. REGISTERED HOLSTEINS.

Breeding superior in milk and fat productions.

Animals well grown and health guaranteed.

Visitors welcome.

LINWOOD FARM
Santa Cruz, Cal.

SHROPSHIRES

Pure Bred and Registered

For 1912:

140 Head Yearling Rams
150 Head Ram Lambs

Enterprise Stock Farm

H. P. EAKLE, Jr. Woodland, Cal.

HOLSTEIN-FRIESIAN BULLS

BRED FOR YEARLY PRODUCTION

Aralia De Kol.

Two of our herd bulls are from 28,000-lb. dams with butter records of 1085 and 1142 lbs. We have fifty cows on yearly test. The first eight junior 2-year-old heifers to finish average 471 lbs. fat (588 lbs. butter, 80% basis). Ten cows have finished, including two 3-year-olds and three 4-year-olds, with an average over 700 lbs. fat (875 lbs. butter). Fifteen cows have averaged 651 lbs. fat (813 lbs. butter). Estimate the value of a bull in your herd backed by such production. Place your order now, as they are going fast. Write for information and prices.

A. W. MORRIS & SONS, Woodland, Cal.

8 Daily Trains to Los Angeles

QUICKEST SERVICE—SHORTEST ROUTES

SHORE LINE LIMITED — Lv. San Francisco Third St. Station 8:00 a.m. — Ar. Los Angeles 9:50 p.m.
Down the Coast by Daylight. Observation Car, Parlor Car Dining Car. First class tickets only.

THE OWL — Lv. San Francisco Ferry Station 6:20 p.m. — Ar. Los Angeles 8:35 a.m.
Buffet-Library Car, Standard Pullman, Observation Car, Dining Car. First class tickets only.

THE LARK — Lv. San Francisco Third St. Station 8:00 p.m. — Ar. Los Angeles 9:45 a.m.
Dining Car. Standard Pullman, Observation Car, First class tickets only.

COASTER — Lv. San Francisco Third St. Station 7:00 a.m. — Ar. Los Angeles 10:30 p.m.
Chair Cars, Smoking Car, Dining Car. All classes of tickets.

FOUR ADDITIONAL TRAINS LEAVING SAN FRANCISCO DAILY WITH STANDARD PULLMAN AND DINING CARS. ALL CLASSES OF TICKETS.

Valley Express Ferry Station 10:40 a.m.
Sunset Express Third St. Station 4:00 p.m.
San Joaquin Valley Flyer Ferry Station 4:40 p.m.
Los Angeles and San Francisco Passenger Third St. Station 10:00 p.m.

SOUTHERN PACIFIC
The Exposition Line—1915

San Francisco: Flood Bldg. Palace Hotel. Ferry Station. Phone Kearny 3160. Third and Townsend Streets Station. Phone Kearny 180.
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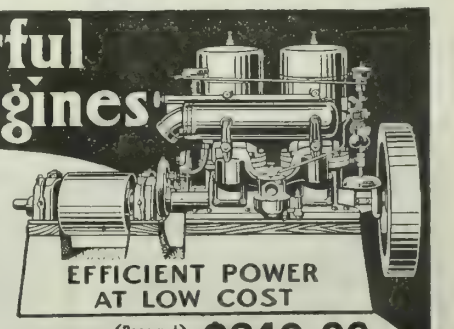
Big Powerful Irrigating Engines



Built especially for long, hard, continuous work. Absolutely dependable; they need no attention except fuel and oil. Automatic throttling governor. Every engine guaranteed. Also used on tractors and in machine shops and factories—light enough to be easily portable and yet can't be beat for reliability and power. Made in two and three cylinder sizes.

Use kerosene, gasoline or distillate. 12 H. P. Complete (Base not included) $249.00

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It describes and illustrates this entire line of Gray Engines, and gives you the information you want. State exactly what your requirements are, and your letter will receive the attention of our Special Service Department.

GRAY MOTOR CO., 819 Gray Motor Bldg., Detroit, Mich.

REGISTERED DUROC JERSEYS

CHAMPION HERD AT STANISLAUS COUNTY FAIR, 1912
THREE FIRST PRIZES AT STATE FAIR, 1912

Herd Boar, Modesto King, out of Colorado King and Helen Blazes V.
Show stock and fine young stock for sale.

JNO. P. DAGGS, Modesto, Cal.

(See me at the State Fair.)

Hot Weather Notes for Poultry Yard.

[Written for the PACIFIC RURAL PRESS by Mrs. SUSAN SWAYSGOOD.]

The season has proved a hard one for for poultry, not in any one section particularly, but all over the United States. In our own State I never heard of so may calamities from heat, and while perhaps some of them were unavoidable, a little forethought would have prevented the greater part. Where it is possible the young stock should be left at liberty so that they can get out in a morning before sunrise. At this time the air is cool and bracing all over this State, and the chicks pick many bits that we know nothing about. But even though there is nothing in the way of feed for them just scratching around in the cool morning air gives them a better hold on life than being shut up in a house or small yard waiting for the feeder.

Just notice a bunch of chicks, or old fowls either, for that matter heaped up in as little space as possible watching and waiting for their breakfast. The under ones nearly always turn out to be runts because they get overheated and lose the strength that is necessary to growth. They develop colds, then follows roup and kindred troubles, and you wonder how they get them, nearly always colds first develop through overcrowding. If young stock must be kept yarded it is a good idea to stir up the soil in the yard and scatter some feed in it after the chicks have gone to bed at night. This furnishes them something else to do than stand at the gate in a heap waiting to be fed. Plenty of green feed in another help to tide over the effects of hot weather, it keeps the blood cool and aids digestion.

The water supply should be taken care of, for above all other things the water stands as a source of health or sickness, according to how it is looked after. All water vessels should be scalded once a week and this need not be much of a task although it may appear so to those who have never practiced doing it. I just take a tea-kettle of water in one hand and a dish mop in the other and go from yard to yard, pour a little water in the crock, give a few wipes around with the mop, then rinse in a bucket of clean cold water.

The comfort of the fowls should be the aim of everyone that is caring for a flock, and by observation anyone can soon find out what adds to the comfort of his flock. A shady place for the heat of day and some moist cool earth for a bathing ground ought to be provided for every flock of birds in the country. If these few things were attended to there would not be near so many, if any at all losses through summer heat.

THE LICE QUESTION.—The question of keeping poultry rid of lice is one of great concern, how great I surely never realized before coming to live in this southern climate. No lazy man or woman should ever think of going into poultry in a warm climate, for warmth is the greatest factor in the breeding of these, at all times too prolific pests. The last few weeks I have been experimenting with some recipes sent out by the State Poultry Department at Davis. And in an insect powder you cannot beat it anywhere at any price, for it simply is one of the best powders I ever tried. The formula for the powder is as follows. Take four quarts of plaster of paris, one and one-half pints of gasoline and one pint of commercial Cresol. Mix the gasoline and Cresol together, then stir in the plaster of paris until the liquid will absorb no more, then spread out in the sun on sheets of paper to dry. About two hours is long enough, pack away in cans as airtight as possible for future use and from sprinkle top as you would other powders. Now plaster of paris is sold by the pound, and I had the druggist weigh four quarts so that I would be sure to get it right. Four quarts weighs six pounds and any druggist will make you a lower rate on that quantity. This particular druggist said he sold it ten cents a pound by the single pound, but in that quantity he would make it seven, quite a difference you see. Then the Cresol was forty-five cents and the gasoline a nickle, so all in all I get nearly seven pounds of the best kind of insect powder for ninety-two cents. No poultryman need neglect his flock when he can have an insect powder as cheap as that—that is guaranteed to do the work.

The formula for Cresol disinfectant is as follows. Three and one-half quarts of raw linseed oil; one pound six ounces of lye or potash; half a pint of water; eight and one-half quarts Cresol.

TO MAKE.—Take a clean five gallon crock and pour into it the linseed oil. The lye must have been already dissolved in the half pint of water; now pour this lye water into the oil, very slowly, stirring all the time in order to mix properly the ingredients. Continue the stirring until a smooth, thick soft soap is formed, then pour in the commercial Cresol which will dilute the soap into a liquid of a clear red color. To use as a disinfectant, a three per cent solution is strong enough for all ordinary cases. This means that to three gallons of the liquid can be added ninety gallons of clear water stirring well to mix. This is undoubtedly good, at the same time it is rather expensive to make, and I prefer the kerosene emulsion to which may be added as little or as much Cresol as the user chooses.

There are cheaper sprays than this one that are probably quite as effective, according to what they are used for.

As we have several questions along this same line it will help all to have them

POULTRY.

ORPINGTONS, BUFF AND WHITE—Summer sale of stock. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

FOR SELECTED EGGS AND CHICKS from S. C. White Leghorns, see Hopland Stock Farm advertisement.

CROLEY'S PIONEER EGG MAKER—Makes poultry pay when egg prices are low.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

BRONZE Turkeys and Eggs. Ed. Hart, Clement, Cal. Large size, good plumage, early maturity.

TWIN OAKS FARM—W. H. Bissell, Proprietor, Livermore, Cal.—Buff, White Orpington.

CROLEY'S HIGH GRADED HARD SHELL—The leader in poultry shell.

Prepare for Egg Production
Get a good supply of
COULSON'S EGG FOOD
and begin to condition your hens for a big production when prices are high in the fall. Start in time to get the egg machinery working right when you make the greatest demand on it.
COULSON POULTRY & STOCK FOOD CO.,
Petaluma, California.

PENNANT STRAIN
BARRED and BUFF PLYMOUTH ROCKS.
A few choice cockerels and pullets left. Eggs for hatching after January 1st.
JAS. M. MONTGOMERY,
4360 Fleming Ave., Oakland, Cal.

HOPLAND S. C. White Leghorn COCKERELS

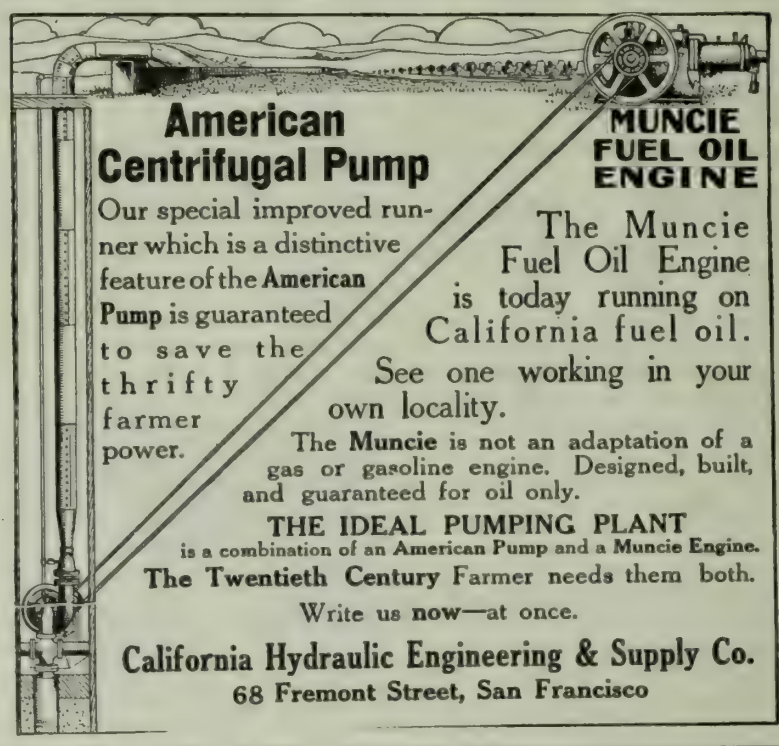
You cannot expect to increase your egg production unless you have the blood lines that it takes to produce eggs. Our birds have been bred for this heavy egg production, and you can increase yours by using our COCKERELS.

Can sell a limited number at Two for $5, or $25 per dozen.

We still have a few of our choice Barred Rocks, Buff and White Orpingtons, and S. C. Rhode Island Reds left.

Write at once if you want some of these rare bargains.

Hopland Stock Farm, Hopland, Cal.
POULTRY DEPARTMENT



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The new edition has been thoroughly revised and brought down to date, and considerable new material incorporated in its pages. The book is well printed, illustrated, cloth bound and has gold back lettering.

Price, postage prepaid, $2.00 per copy.

You need a copy on your farm, and its being upon your shelf will mean more and better vegetables for the table and more profits from your field operations.

Send orders to the

Pacific Rural Press, Publishers
420 Market St., San Francisco.

covered. Mrs. R. D. P., Atwater, asks "What can I do for fleas in the poultry yards, I have lost several fine hens and two bantams; suspect the fleas did it?"

Mr. J. S. H., Modesto, asks "Can you tell me what to use for the small stick tight fleas, that will not injure the chicks. The flea seems to be only on their heads and it is difficult to put anything on the head without getting a little in the eyes and mouth."

As the same answer will apply to both cases I will answer the last one more fully. When the fleas are on the chickens heads, they can be easily killed with "Conkeys Flea Salve", nearly all poultry supply houses keep Conkey's remedies; the price is 25 cents a can. But in addition I would advise a good spray, the one described about would do away with the fleas to a certainty, or a spray such as is used for sheep dipping would kill the fleas. Even cold water is very discouraging to such pests and it certainly would be best to prevent the breeding of them. Alum water is a sure cure for preventing the breeding of fleas, they cannot stand anything sour. Fleas will not bite a person whose blood is in any degree acidy; they pick for the alkaly blood because it sweet.

Dear Madam: My chickens are dying of zinc poisoning, have lost 125 already what can I do to save the rest?—Miss K. M., Oakland.

ANSWER.—Give all the milk they will drink or flaxseed tea. White of an egg is really the best remedy, but should be given at once. Also get one ounce of sodium sulphate; two ounces magnesium sulphate, water one pint, mix and either give with a spoon or put in water vessel. Nothing but prompt action is of any service in these cases, so I wrote the lady a letter at once telling her what to do.

But by the way these personal letters are outside my agreement with the RURAL PRESS and sometimes our friends even fail to send a stamp. Yet in cases where the need is urgent I am always glad to help, but please do not expect personal letters unless in a case of emergency. Now it is not generally known that watering fowls in old paint cans will cause lead poisoning, but it will. All such things should be banished from the poultry yards, for if one accidentally gets water in and is left laying around it means death to whatever drinks it. And these are the cases that nobody knows what ails them, and no one can cure them for they die before anything can be done, and the death is ascribed to some other cause.

TICK-PROOF HOUSES.

In a recent issue various methods of control of the fowl tick were given which were taken from a bulletin of the Bureau of Entomology of the U. S. Department of Agriculture. For the reason that prevention is better than cure, the matter of tick-proof houses is of great importance, and this is what the author, F. C. Bishop, says on the matter:

When it is planned to construct new quarters for poultry, the matter of protection from this pest should be kept in mind. It is possible to build chicken-houses which are practically tick-proof; moreover, the cost of building and maintaining such structures does not greatly exceed the outlay necessary to construct a house which would favor tick development.

Houses can be built of a variety of different materials so as to make it very easy to control this pest. If it seems desirable to build a frame structure, all parts should be made of smooth lumber and care should be taken to furnish the least possible number of hiding places for the ticks. Shingle roofs, when once infested, are exceedingly difficult to rid of ticks. It is therefore advisable to make the roof of corrugated iron, tin, or one of the patent roofings.

The all-metal chicken-house has many advantages over wooden or partly wooden structures. A number of such houses built mainly of metal are in use in southwestern Texas and have been found practically tick free, although no precautions were taken against introducing ticks with the poultry or of treating the inside of the houses.

In constructing a poultry house the individual needs largely govern the style and size of the structure. The cost of materials required for an all-metal house 14 feet long, 10 feet wide, and 7 feet high in front, with a roof sloping one way, has been found to amount to about $25. These figures are based on the use of ¾-inch piping for the framework and painted corrugated iron for the covering. The difference in price of painted and galvanized iron is considerable, the former being about $2.40 per square and the latter about $3.50. The painted iron will be found satisfactory for use at inland points. Its life may be increased by applying an occasional coat of paint. In the construction of the frame it is necessary to have the piping cut to the required lengths and threaded. The large number of short pieces of piping and the considerable number of crosses, elbows, and Ts make the assembling of the frame rather difficult. When angle iron is available it is more desirable and costs no more. The corrugated iron may then be riveted on or cleated on as would be done if the piping frame were used. Wooden frames may be employed if the metal is too expensive or difficult to obtain. When wooden frames are used it is best to put the framework on the outside of the sheeting. These corrugated iron houses are very hot during the day and therefore shade, other than that afforded by the houses, should be provided in the chicken yards. This extreme heat and the lack of protection are the essential factors in keeping the chicken tick out. The tick will never become a serious nuisance in an all-metal house if protection, such as loose boards, nests, etc., is not given it. Nevertheless, it is advisable to avoid introducing the pest, if possible. The complete destruction of the tick, should it become established in a metal house, is easily accomplished by removing the roost and burning a considerable quantity of straw, paper, or other light material within the house. All parts of the house should be thoroughly heat or reached by the flame. As has been stated, the roosts should always be arranged to permit of easy removal for cleaning and other purposes.

It is recommended that nests be located apart from roosting places. Tick-proof nests or boxes isolated by means of legs set in dishes filled with kerosene are desirable. If, however, the nests are made of ordinary boxes and not allowed to come in contact with any walls, it is seldom that they will become infested to any degree if thoroughly cleaned out occasionally. Should these boxes become infested, they can be destroyed with little loss. Metal nests may be made with a ring of small iron to which is attached a sort of basket made of wire netting. These nests may be thoroughly cleaned by burning the straw which they contain and holding the wire part over the blaze. In the infested territory, brooders and pens should be selected or constructed with a view to lessening hiding places which may be occupied by this pest.

That the fowl tick can be kept completely out of a poultry farm has been demonstrated conclusively by a few progressive poultrymen in Texas, but this is the reward of scrupulous cleanliness and constant vigilance.

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The Home Circle.

Owning Up.

"It is disgraceful, Donald, that you should not have owned up immediately. A gentleman always takes the consequences of what he has done."

"It just seemed as if I couldn't, Jack," groaned the little fellow, as he looked up to his older brother almost imploringly. "When Farmer Hunt pounded into the science-room there, looking like the blackest kind of a thunder-cloud, and made all that fuss because the cows had trampled down his corn, honestly that was the first time I remembered it; and then Mr. Loring was so stern and said the boys had been warned times enough not to make trouble for the farmers round here, and I—well, I suppose I was scared, and I just sat still through the rumpus."

"Well, you are in twice as bad a fix now, anyway. It isn't so bad to be careless as to be sneaky, and now you've been both," reproved Jack, in elder brotherly fashion.

Donald groaned again.

"How did you happen to leave all the bars down, anyway?"

"Why, it was day before yesterday, the day of the hare and hounds. Of course, Bob and Harry and I didn't expect to keep up with you big fellows; but we ran as far as the six-acre lot, and then dropped out. We rested under the big apple tree, and we took out the bars so as to knock down some apples that looked ripe. Then all at once we heard a wagon coming along, down below in the road; and we rushed so as to get a ride back, and I never thought of the bars again," explained Donald, ruefully.

"And Bob and Harry went back to the city yesterday, and start for the West today, said Jack, thoughtfully. "Well, it's no use to drag them into it now. There's only one thing to be done—tell Mr. Loring, and then tramp over to Farmer Hunt's and offer to pay the damages."

"Won't you go with me, Jack? I don't dare go to Farmer Hunt alone."

"I suppose I've got to," said Jack, ungraciously. Donald pressed his lips tightly together to keep from crying, but he said nothing; and the two walked to Mr. Loring's tent in silence. The rules at the summer camp were not many nor difficult; but Mr. Loring's displeasure was dreaded by the boys, not because he was actually severe with them, but because his standards were high, and he had a way of making the boys share something of his own contempt for meanness and ungentlemanly behavior wherever he found it.

Yet Mr. Loring's voice was gentle and his words kindly, as he heard Donald's confession. He excused nothing, but bade the boys let Mr. Hunt know the true state of the case immediately, "Did you know," he asked gravely, "that he said he should flog his own boy for not keeping better watch of the cows, unless he could find out the one who did it? You do not wish to have another suffer for your silence this morning?"

"I am sorry," faltered Donald. "I'll pay the damages out of my own pocket money." Mr. Loring's words had added fresh fear to Donald's misgivings; but, flogging or not, he was in for it now.

As the boys turned away, Mr. Loring spoke to Jack, who stood in the background.

"You posted those letters all right that I gave you yesterday, did you, Jack?"

"Yes, Mr. Loring," replied Jack, readily. "I took them up to the office myself."

"That is all right then. I felt sure I could trust you. One was a most important letter for England; and, unless it was posted yesterday, I feared it mightn't catch the Saturday steamer. That is all."

After all this anguish of dread, the interview proved not to be so terrible as the boys expected. Farmer Hunt's wrath, if not moderated, was, at least, under better control than in the morning; and the offer to pay for the damage availed much. He was more concerned to get good pay for his ruined corn than to take revenge on the culprit. The matter was soon settled; and the boys took up their homeward way, much relieved in mind.

"Now we'll dismiss the matter," said Jack, in his most grown-up tone. "But let this be a lesson to you, youngster. A thing cannot ever be so bad that sneaking out of the consequences will not make it worse."

"I will remember, Jack. I truly will," responded the little fellow humbly.

Jack and Donald tented together. That evening, after a particularly jolly game of acting charades, Donald said good night and went to his tent. The older boys sat for half an hour longer around the log fire in the central cabin; but, when Jack was ready to go to bed, he found Donald still awake.

"I'm so happy, Jack, to think I told and got it all off my mind that I just can't go to sleep," said Donald, sitting up in bed as he entered.

"Oh, you're all right now. You are a good fellow, too; and you played just dandy tonight in the charade," said the older brother, generously. "Now go to sleep, and tomorrow's another day."

As Jack was talking, he flung off his jacket, and something fell out of the inside pocket. "What's that?" he said, staring at it. Then he went across the room and picked it up, turning it over; but he did not speak.

"What is it, Jack?" queried the other. Still no answer.

"Jack, what's the matter?" And Donald jumped out of bed.

Jack turned a perplexed face toward him. "Why, Donald, it's the letter of Mr. Loring. And it is addressed to England. Why, I went way over to town on purpose yesterday, just to post his letters; and there is the important one here now. I must have left it in my pocket, when I took out the others. I never looked at the addresses."

There was silence in the room. Donald climbed back into bed while Jack sat still, the letter thrown on the table, his face turned away from Donald. After a little he arose and began slowly to undress.

"What are you going to do, Jask?" ventured Donald after a while.

"Oh, I'll run over to town early in the morning and post it. I guess it's all right enough." But Jack spoke gruffly, as if he didn't wish to be questioned.

"Shall you tell Mr. Loring first?"

"What is the good of telling him?" queried Jack, impatiently. "The letter can't go any quicker than it can, can it?" Then, after another pause: "And, Donald, how can I tell him, anyway? Didn't you hear what he said about trusting me? He will never trust me again in the world. It isn't like something you can pay damages for and settle all up," he added bitterly.

"Do you mean you aren't going to tell him at all?" And Jack turned to meet the reproachful gaze of his little brother.

"He'll never know it, anyway; and it

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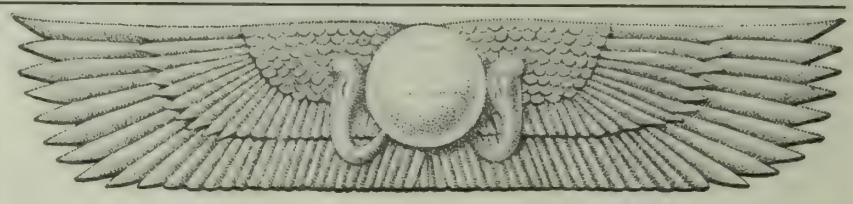

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Ancient Egyptians carved over their doorways and upon their temple walls the symbol of supernatural protection; a winged disk. It typified the light and power of the sun, brought down from on high by the wings of a bird.

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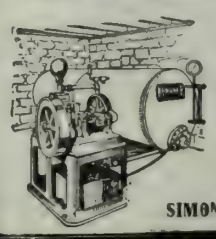

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wouldn't do him a bit of good to know it, either. The postmaster here is always getting into trouble over delayed letters, and it might be delayed in a dozen different ways."

Donald never said a word. He lay down in bed, turned his face to the wall, and kept quiet. Jack finished undressing, and blew out the light. The clock in the cabin struck; and after a while it struck again, heard distinctly in the silence of the night. Jack tossed restlessly. At last he said: "Donald, you awake?"

"Yes, Jack," came a muffled voice from the other cot.

"I'm going over to wake up Mr. Loring and ask him if I shall take the letter to the station tonight and give it to the conductor on the night express."

Donald sat up, eagerly. "Oh, I knew you would!" he cried, joyfully. "And do you want me to go with you?"

"Yes, of course, I do." As he said this he was hurrying on his clothes, and Donald was not far behind him. "I was thinking I might run over to the station without telling Mr. Loring; but, if he should know I went outside the camp after curfew there would be more trouble, anyway."

The boys went over to the large central tent which Mr. Loring occupied. As they reached it, the light inside went out. Mr. Loring heard them coming, however, and came to the opening in haste.

"What is it, boys? One of you ill?"

"I have come to tell you that I didn't post your English letter, after all, Mr. Loring," began Jack, bravely. "I thought I did; but when I undressed, it fell out of my pocket. I wonder if I cannot run over to the station with it and catch the night express." He spoke pleadingly.

"My letter? That letter for my sister? But you went to bed more than an hour ago. Why didn't you tell me at once, and there might have been time to do something? But no. I am quite sure it is too late, anyway." Mr. Loring spoke sadly. "And I thought I could trust you, Jack."

Jack said not a word of excuse, but handed the letter to Mr. Loring, who took it half mechanically. His eyes brightened, though, as they fell on the address. "Oh, it doesn't matter at all about this letter," he said, cheerfully. "There were three letters for England in the package I gave you, and the important one has gone."

Jack and Donald took each a long breath of satisfaction.

"Oh, what if I hadn't told!" Jack murmured. "I should have worried about it and felt mean all my life, but I'm afraid I shouldn't if it hadn't been for Donald here." He spoke honestly, and his voice shook.

Then the doctor took his hand and looked earnestly into his eyes. "It would have meant, too, that you had forfeited the respect of your brother, Jack. That is something you couldn't afford to lose."

Mr. Loring always knew when enough had been said, and the boys went back to their tents. "Well, it's all right now," said Donald. "And tomorrow is another day."

"But I shall not forget this one," returned Jack. "And I tell you, youngster, we'll stand together better than ever after this. Don't you say so?"

And Donald squeezed his brother's hand as he replied, "You bet we will!"

Ye Housewife.

Yes, this is our hottest month, and still we must cook for—the men.

There would be precious little cooking done in summer if it were not for the lords of creation.

Here are a few hints that all of us should follow:

Keep as quiet as circumstances will allow.

We must work, but do it without fussing.

Take a siesta, or even a nap daily. Don't neglect this. Find time somehow.

Wear light weight, light colored, porous clothing, linen or cotton.

Take a cold bath at least once a day; two or three are very refreshing on a hot day.

Keep in the shade, in the breeze, and away from the reflected light of the sun.

Have the kitchen cool and just as little fire as possible.

Eat largely of fruits, avoiding fats and heavy carbohydrates.

Do not watch the thermometer and "stew" over the weather. It will only make you more uncomfortable.

Our internal temperature seldom rises above 99 degrees or falls below 97 degrees.

The primary source of body heat is the food we eat.

For keeping cool, there must be a reduction of heat formation in the body and the facilitating of riddance of heat.

We should make no unnecessary muscular movement nor work our brains unnecessarily over the fact that the weather is warm.

That Egg.

"Waiter!" The voice of the elderly man rose in accents of wrath from his table by the window.

"Yes, sir," replied the waiter, bustling forward. The customer swallowed several times quickly before he could command his voice. "Here, take—take this egg away!" he roared with an effort.

"Yes, sir," said the waiter obligingly, as he approached the offending article. "And what shall I do with it, sir?" The elderly man rose menacingly in his chair.

"Do with it!" he bellowed. "Do with it? Wring its neck!"

The Individual Clock.

A gentleman in a club in Grand Rapids, Mich., had formed the hopeless and harmful habit of taking too much to drink—alcoholically speaking—before he went home every evening.

"How does he know what time to go home?" asked a stranger in the club one night.

"It's this way," explained the member. "He goes to the head of that long flight of stairs leading to the street. If he falls down them, he knows it's time to go home."—The Popular Magazine.

Up in the Air.

"Good heavens!" cried the aeroplane skipper. "What's the matter? What makes her go so slow?"

"Why, sir," replied the engineer, "we're passin' through the Milky Way, an' the propeller's full of butter!"—The Flyer.

"When you kissed your weeping mother good-bye and went out into the world to make your fortune I presume her last tearful injunction was for you to be good?"

"No, make good."—Houston Post.

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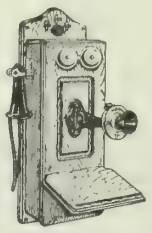

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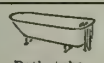

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San Francisco

THE MARKETS.

San Francisco, Aug. 20, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Northern red has been marked down a little, but other lines are fairly steady at the moment. Values, however, are largely nominal, as trading here is limited. The old stock is pretty well cleaned up, and so far new grain is not coming forward in any quantity.

California Club, ctl	$1.52½@1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½@1.55
Northern Bluestem	1.67½@1.70
Northern Red	1.60 @1.65

BARLEY.

Choice feed shows a wider range, the quality of most offerings being not very well up to standard. Strirtly first-class stock, however, is held at about $1.30, and some sales for August delivery have been made at that price, the demand being fairly good.

Brewing and Shipping	$1.35 @1.37½
Choice Feed, per ctl	1.22½@1.27½
Common Feed	Nominal

OATS.

There is no business worth mentioning in spot oats at present, and values stand nominally as last quoted.

Red Feed	$1.65 @1.85
Seed	Nominal
Gray	Nominal
White	1.55 @1.60

CORN.

The Eastern corn market is still booming, with reports of short crops and a heavy speculative buying movement. Local prices are higher in sympathy, carrying California corn up also.

California Yellow	$1.85 @1.90
Eastern Yellow	1.85 @1.90
Eastern White	Nominal

RYE.

The demand for rye is very light, and, with no large offerings in this market, the price remains nominal at the old figure.

Rye, per ctl	$1.45 @1.50

BEANS.

The new crop is getting far enough along to give some idea of the yield, and the prospects are much better than they appeared a fortnight ago. Some little damage to limas is reported from the hot spell, but on the whole the crop is coming on well. Spot prices are fairly steady as last quoted, with only a moderate demand and rather light stocks of practically all descriptions. Most of the old limas remaining are now held by Coast dealers, jobbing stocks in the East being very light. New crop prices are unsettled, as growers are firm in their views, while some dealers have been selling short.

Bayos, per ctl	$3.15 @3.25
Blackeyes	3.15 @3.35
Cranberry Beans	4.70 @5.00
Horse Beans	1.90 @2.15
Small Whites	5.25 @5.50
Large Whites	4.25 @4.50
Limas	5.40 @5.50
Pea	Nominal
Pink	2.75 @3.00
Red Kidneys	3.40 @3.60
Mexican Red	3.75 @3.80

SEEDS.

Alfalfa remains practically nominal, as no large amount of new seed has come in, and so far there is very little demand. Other lines are quiet and steady as last quoted.

Alfalfa	12½@14 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	6 @ 6½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

There is nothing new in the flour market, prices being well maintained at the same level as for several months past.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.60 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Hay continues to come into the local market on about the same scale as for several weeks past, and the continued large arrivals have made it necessary for dealers to take more storage space, as it is altogether impossible to dispose of such large offerings as they come in. There has been quite a heavy buying movement in the last few weeks, and most of the consumers have taken on all the stock they care to handle. It is expected that much more hay than usual will be stored here during the fall. Considering the heavy arrivals and the surplus now accumulating, prices have been very well maintained, and no further decline is noted. Much of the present supply was taken on at higher prices than now prevail, and dealers are holding it back in hope of a rise later on. Dealers are now buying little in the country, looking for a rather light movement during the fall.

No. 1 Wheat, or Wheat and Oat	$15.50@16.50
do No. 2	14.00@15.50
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 95c

FEEDSTUFFS.

Cracked corn has been marked up quite sharply, in sympathy with advances in the whole grain in the East. Middlings are quoted a little lower, other lines standing as last quoted.

Alfalfa Meal, per ton	$18.50@19.50
Bran, per ton	26.00@27.00
Oilcake Meal	32.50@33.00
Cocoanut Cake or Meal	28.00@29.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	27.00@28.00
Rolled Oats	33.00@34.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Onions show a little narrower range, but there is no very heavy movement at present. The principal feature this week is the marked increase in the arrivals of tomatoes, which are accumulating as usual at this season, with most of the stock moving at low prices. Green corn also is very plentiful, and while most choice offerings find a ready market, prices are rather low. Peas are pretty well maintained, and lima beans are a little firmer on light offerings, while string beans are easy. Cucumbers are somewhat stronger, and summer squash shows considerable advance at the moment, while okra, eggplant, and green peppers are easy and plentiful.

Onions: New Yellow, River, ctl	$ 1.00@ 1.15
Garlic, per lb	3½@ 5c
Cucumbers, per box	35@ 50c
Green Peppers, box	40@ 60c
Carrots, per sack	75c
Cauliflower, per doz	50@ 60c
Green Peas, lb	4@ 5c
String Beans, lb	3@ 5c
Summer Squash, lug box	75@ 85c
Green Corn, choice, sack	75c@ 1.75
Okra, box	40@ 50c
Tomatoes, box	30@ 65c
Eggplant, box	35@ 75c
Lima Beans, lb	6@ 8c

POTATOES.

Sweet potatoes show a further decline with fairly large arrivals and only moderate demand. River potatoes are moving about as usual at this season in the local market, and with some shipping business supplies are kept within reasonable proportions.

New River Whites	95c@$1.25
Sweet Potatoes, per ctl	2.00@ 2.50

Dairy Produce.

POULTRY.

Prices show no quotable change this week, but the market for California stock is dull and weaker than for some time past. Supplies of Eastern stock show some increase, and now include a good many young chickens, causing an easy feeling in this line. Hens are still plentiful, and the large offerings of unattractive stock from nearby points tend to depress the market.

Large Broilers, per lb	24 @25 c
Small Broilers, per lb	24 @25 c
Fryers, per lb	24 @25 c
Hens, extra, per lb	16 @17 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	24 @25 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.75@ 2.25
Ducks, doz	4.50@ 6.00
Turkeys, live	20 @22 c

BUTTER.

With a little larger receipts, extra butter dropped ½c after the last report, and has been steady at the new level all week with very little trading on the Exchange. Other grades stand as before. Considerable Eastern butter has come in, but has had little effect on the market for fresh.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32½	32½	32½	32½	32½	32½
Prime Firsts	30	30	30	30	30	30
Firsts	29	29	29	29	29	29

EGGS.

Extras show further fluctuation, but the tendency so far this week has been upward, though the market is barely steady as now quoted and the demand is rather sensitive to price changes. Selected pullets have also been marked up, firsts standing as before. Storage and Eastern eggs are still moving fairly well.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	30	30	32	32½	33
Firsts	27	27	27	27	27	27
Selected Pullets	25	25	25	25	26	26

CHEESE.

Fancy flats have taken a sudden upward turn, though the price of 18c quoted early this week has not been held. Y. A.'s are steady at a drop of 1c.

Fancy California Flats, per lb	17½c
New Young Americas, fancy	17 c
Monterey or Jack Cheese	14@15c

Deciduous Fruit.

All kinds of berries are offered freely, and while some of the early arrivals bring fair prices, the general range of prices is lower on all lines, and there is usually considerable surplus for the canners. Apples show no further change, both supply and demand being moderate, while pears, though still held at the old range, are coming in rapidly and are hard to clean up. Peaches are in very fair demand, with fancy wrapped fruit bringing an advance, and clings, though a little lower for ordinary stock, are moving well. Plums are moving fairly well at the old prices, while figs are offered in large quantities and bring rather low prices, though Sonoma stock in large boxes sells up to 90c. Arrivals of cantaloupes and nutmeg melons are extremely heavy, and prices show some reduction. Grapes also are lower, with increasing arrivals, though a few tokays coming in are held up to $1 and $1.25 per crate.

Strawberries (chest):	
Banner	$ 3.00@ 4.00
Other kinds	2.25@ 3.50
Loganberries, chest	2.50@ 5.00
Blackberries, chest	1.75@ 3.00
Huckleberries, lb	5c@ 7c
Raspberries, chest	6.00@10.00
Apples:	
Gravensteins, box	$ 1.00@ 1.50
Other fancy apples	85c@ 1.25
Common	50c@ 1.00
Crabapples, large box	75c@ 1.00
Pears: Bartlett, No. 1, box	1.25@ 1.75
do No. 2	75c@ 1.00
Peaches, box, wrapped	40@ 65c
Carriers	65@ 85c
Clings, lugs	90c@ 1.25
Plums, crate	50@ 75c
Prunes, box	25@ 50c
Figs: Single layer, drawer	35@ 65c
Nectarines, crate	65c@ 1.25
Cantaloupes, large, crate	2.00@ 2.25
Nutmegs, crate	60@ 85c
Watermelons, per dozen	1.25@ 2.50
Grapes: Seedless, crate	65@ 75c
Malaga	60@ 85c
Muscat	85c@ 1.00
Black	40@ 60c
Tokay	1.00@ 1.25

Dried Fruits.

The raisin market is now receiving more attention, as the Associated Raisin Co. has announced opening prices on 1913 raisins, and an active movement is starting in. Prices offered to growers show some advance. Values for fruits in general show no further change, but there is an active demand for 1913 crop in nearly all lines, and a large amount is being bought up by packers in most districts. Some Santa Clara pickers say most of the new crop prunes have been bought at 5c or slightly over for the large sizes, though they are hardly as anxious to buy as last week. The sizes in irrigated orchards are coming out well. Growers are taking a firm view as to peaches, and little can be had under 5c. The New York Journal of Commerce says: "The trade here did not seem to be interested in the quotations of the Associated Company, particularly as some of the outside packers were offering to shade them an eighth of a cent and were giving an extra 2½% discount. The market for new crop peaches is firm and advancing. Packers are said to be freely bidding 5c for orchard run to the growers. Some of them are said to have sold short and are trying to cover, though to do so they must face a loss. Some outstanding contracts are understood to call for deliveries at as low a price as 4¼c for choice. Spot peaches are reported to be getting more attention from the jobbing trade, and as stocks are comparatively small and in few hands, prices show an upward tendency.

"Apricots on the spot ar quiet, but under limited offerings the market is firm. The Coast market is strong with 11½c for standard, 12¾c for choice, 13¼c for extra choice, and 14¼c for fancy in 50-pound boxes, apparently inside quotations. Stocks on the spot here are light and, though there is little present demand, quotations are maintained.

"California prunes are inactive for either immediate or future delivery, but the market has a firm tone. Spot stocks are going steadily into consumption on small orders, and are getting into small compass, particularly in the more popular sizes. Packers are not trying to force sales of futures on a reluctant market and maintain prices on the basis of previous quotations. No offerings of 40s to 60s for October shipment from the Coast are being made so far as can be learned on less than 5¼c f.o.b. four-size bulk basis."

Evap. Apples, 1912 crop, per lb	6½@ 7 c
Apricots, 1913	12 @14 c
Figs: White, 1913	3 @ 3½c
Black, 1913	2½@ 3 c
Calimyrna, 1913	4½c
Prunes, 4-size basis, 1912	4 @ 4½c
do 1913	5 @ 5¼c
Peaches, 1912	4¾@ 5 c
do 1913	4¾@ 5 c
Pears, 1913	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912	3½c
do 1913	4 c
Thompson's Seedless, 1912	4½c
do 1913	4 @ 4½c
Seedless Sultanas, 1912	3¾c
do 1913	3¾c

Citrus Fruits.

Oranges find a light but fairly steady demand at the old figures. Mexican limes are higher, but lemons and lemonettes have been marked down a little.

Oranges (per box):	
Valencia	$ 4.00@ 6.00
Grapefruit, seedless	2.00@ 4.50
Lemons: Fancy	5.00@ 7.50
Lemonettes	5.00@ 6.00
Limes	10.00@12.50

Nuts, Honey, Hops, Etc.

NUTS.

New crop almonds are quoted in some quarters as follows. Walnuts are entirely nominal, as there is no old stock left in first hands, and no prices have been set on the new crop.

Almonds, new crop—	
Nonpareils	17 c
I X L	16 c
Ne Plus Ultra	15 c
Drakes	13 c
Languedoc	12½c
Hardshells	7 c
Walnuts, 1912 crop—	
Softshell No. 1	16 @16½c
Hardshell No. 1	15 @15½c
No. 2	10½c
Budded	17 c

HONEY.

The movement is light at present, and there has been a little accumulation in the local market, but values are pretty steadily held as last quoted.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Both demand and supply are limited, offerings being pretty closely held, and the price is steadily maintained.

Light	30 @32 c
Dark	28 @30 c

HOPS.

There is considerable movement of new hops, though a good many growers are still holding for an advance, which buyers are not yet willing to meet.

1913	20 @22 c

Live Stock.

All lines of livestock and dressed meat are steadily held at last quotations, hogs being about the strongest article on the list, as arrivals have not yet increased to any extent.

Grass-fed Cattle—	
Steers: No. 1	7 @ 7¼c

CLASSIFIED ADVERTISEMENTS.

Rate 2c. per word. No order for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

POSITIONS WANTED

An efficient and thoroughly experienced ranch superintendent would like to meet or correspond with owner who may be in need of such a man. Address Box 6, Pacific Rural Press.

WANTED

ORCHARD SUPERINTENDENT—Wanted, an energetic young man, preferably married, experienced in orchard work, of good business capacity, to take charge of large apple and berry farm. Reply in writing, to "Orchard Superintendent," this office.

WANTED—TO BUY 20 to 25 acres ALFALFA ranch or ALFALFA LAND with water, near town. Must be bargain. Owners only. Send full particulars; state lowest price. L. C. GARDNER, 311 Van Ness Ave., San Francisco, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

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NURSERY TREES, fruit and ornamental. Nearly all varieties to be seen on our experimental place near State highway. LEONARD COATES NURSERY COMPANY, Morganhill, California.

CASH NURSERIES—Burbank cactus a specialty Trees of quality. Sebastopol, Cal.

MISCELLANEOUS

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SPECIAL LAND SEEKER'S EXCURSION NEXT NOVEMBER to Victoria, Australia. Early reservation of berths desired. Reduced steamship passages and free rail travel for inspection. GOVERNMENT OF VICTORIA WANTS SETTLERS and offers unusual opportunities. Lands suitable to all requirements, exceptional terms. Free particulars from F. T. A. FRICKE, Government Representative (from Victoria), Box W, 687 Market St., San Francisco.

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I have modern 6-room house in Portland, Oregon, worth $3000; will trade for high-grade Jersey, Guernsey, or Holstein cows, young stock. Have party in California who will pass on cows for me. C. W. DAVIS & CO., 606 Commercial Blk., Portland, Ore.

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AIR-SLACKED LIME—Reasonable prices on fertilizers. H. B. MATTHEWS, 733 Merchants' Exchange Bldg., San Francisco.

No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7 @ 7¼c
Medium	6½@ 6¾c
Heavy	5 @ 6 c
Hogs: Grain-fed, heavy	8¼@ 8½c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4¼@ 4½c
Ewes	3¼@ 3¾c
Lambs: Suckling	5½@ 6 c

DRESSED MEATS.

Steers	12 @12¼c
Heifers	11 @11½c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

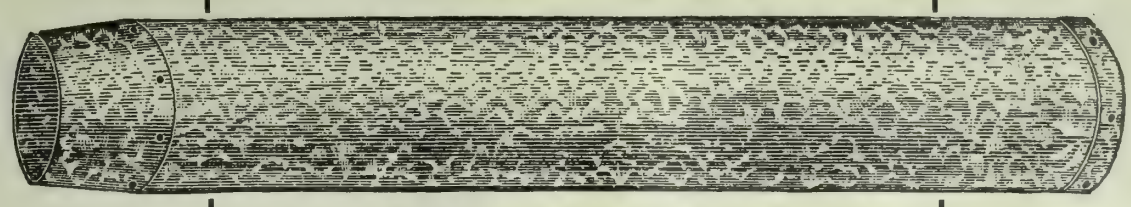
WOOL.

The market remains very quiet, with very little demand from the usual sources, though the spring clip in some parts of the country is said to be fairly well cleaned up.

Spring clip:	
Southern mountain, free	8 @11 c
Northern, year's staple	13 @14 c
Humboldt, year's staple	18 @19 c
do short	13 @14 c

The Only Scientifically Constructed Surface IRRIGATION PIPE Is The "AMERICAN"

LOCK THEM WITHOUT RIVETS. NO ROUND SEAMS TO LEAK



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American Steel Pipe & Tank Co.

354 PACIFIC ELECTRIC BLDG., LOS ANGELES, CAL.

HIDES.

There has been no change in quotations for the past few weeks, but everything under this head is firm, with light supplies, though the demand locally is not especially strong.

Heavy Steers, over 56 lbs.	14½c
Medium	13½c
Light Steers, under 48 lbs.	12½@13½c
Heavy Cows, over 50 lbs.	12½@13½c
Light Cows, 30 to 50 lbs.	14 c
Kip	14½@16 c
Veal	17½@19 c
Calf	17½@19 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

The local market is still very quiet, and it is difficult to effect sales at satisfactory prices. In the absence of important business, values are largely nominal.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

ALFALFA GROWING.

To the Editor: I wish you would please state through the columns of your paper which is the best alfalfa seed to plant. Some inform us that Arabian is best, and others that the German is best. Please state also if it isn't best to get the alfalfa that has the smallest stems, as I should think there would be less loss in feeding. Also, don't you think that September or October would be a good time to seed? We thought of flooding the land about September. Then let it dry, and then cultivate and sow the seed, and then not to irrigate again until next year. How much seed should be sown to the acre? This is in Stanislaus county where this alfalfa is to be planted.—Subscriber, Stockton.

All these questions have been fully discussed in the many special and editorial articles which we have printed about alfalfa during the last year and more. We comment briefly: There is no alfalfa yet proven to be better than the common alfalfa now chiefly grown in this State. All newer varieties have been praised by some and condemned by others—due largely to difference in local conditions. The common alfalfa suits more conditions than any other. A thin-stemmed alfalfa would be best—if you could get plenty of it. The common alfalfa has a medium to thin stem, compared with others. We know no German alfalfa. The plant "lucerne" agrees closely with our common alfalfa and grows in all European countries. The newer varieties are chiefly from Asia. It is a good idea to start in the fall if you have plenty of water to get the plant started early so it will make quite a growth before fall frosts become sharp. The sowing is usually about 20 pounds to the acre.

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10,000 feet 6-inch Screw Joint Casing.
14,000 feet 3¼-inch Screw Joint Casing.
All re-dipped in Pure Asphaltum. Was in use only a few months.
Good as new.

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All crops of broom corn have been burned up, and we advise you to buy all the brooms you will need within the next six months, at once.

W. C. PRICE & COMPANY

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Ernest Thompson-Seton said: "I asked a little boy in one of my camps to tell me something wonderful about birds.

"'Why,' said the little boy, 'how they come out of the eggs, that's wonderful.'

"'Now,' I went on, 'tell me something about them more wonderful still.'

"'Why,' he answered, 'it's more wonderful how they ever got inside the eggs.'"—Cincinnati Enquirer.

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Capital Paid up	$6,000,000.00
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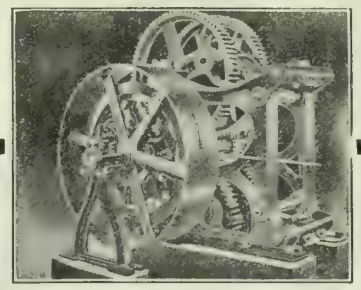

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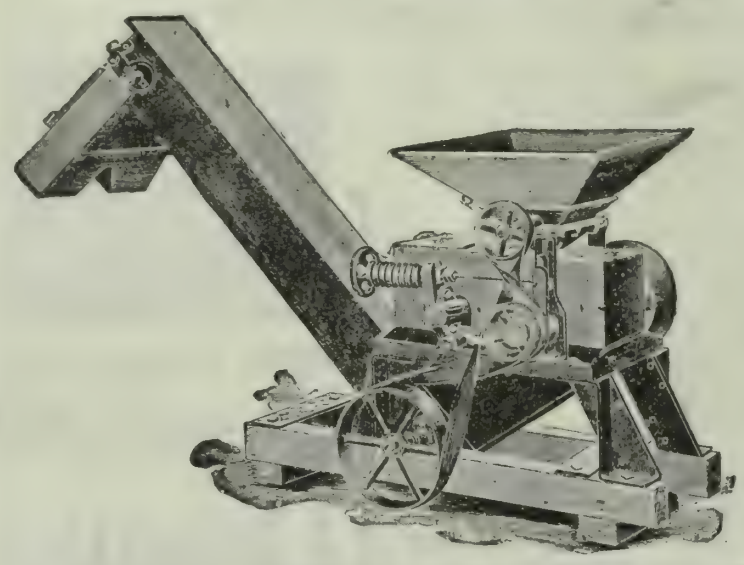

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This tool is made in California; made in two sizes; requires but little power, and will make more money for you than any tool on your farm.

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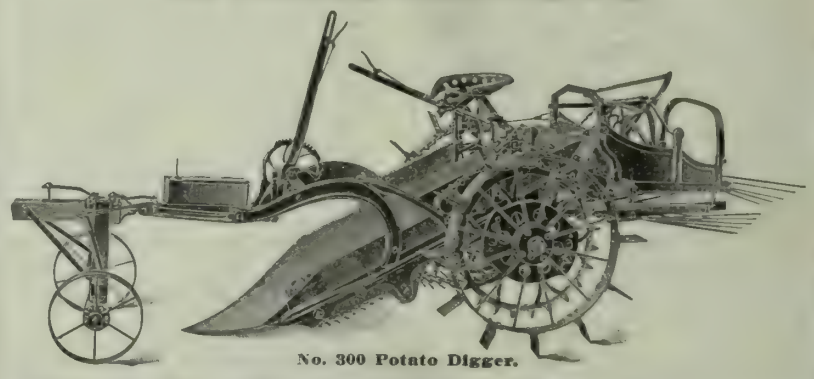
Hoover Potato Digger

FOR CALIFORNIA POTATO GROWERS



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- Puts Potatoes in Narrow Row Easy to Pick.
- Carries Vines to Left Side.
- Has 36-inch Drive Wheels.
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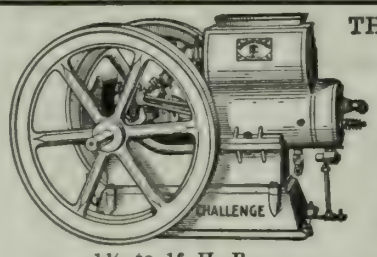

1½ to 16 H. P.

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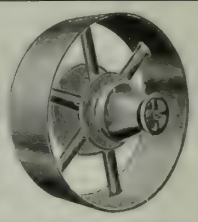

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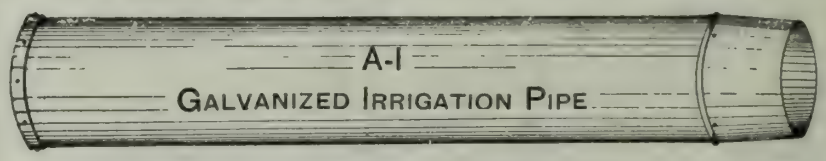

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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 9. SAN FRANCISCO, SATURDAY, AUGUST 30, 1913. Forty-Third Year.

COVER CROPS BY RAINFALL.

[Written for the PACIFIC RURAL PRESS by H. H. McKINNEY, Ukiah, Cal.]

I hope that the readers of the RURAL PRESS will pardon my intrusion into the discussion on humus building which has been carried on in these columns the last few issues. As I feel a deep interest in this subject, as every Western farmer has a right to feel, I don't like to let the opportunity pass without getting into the ring and giving some of my experiences with humus building in young orchards on worn-out hay lands in the bench section of the Ukiah valley in Mendocino county.

It is impossible to advise too strongly, "Get humus (organic matter) into the soil." It is true that most of our worn-out soil does contain plant food, but on these lands the plant food is derived chiefly from inorganic sources, and in most cases is to a great degree unavailable for immediate use by the plant. A good soil must have plant food which is derived from organic sources as well as from inorganic sources, if the best results are to be obtained. Under ordinary circumstances it is safe to say that most of the soil troubles in California and other Western States are due chiefly to the lack of organics (humus) in the soil.

I remember distinctly some years ago, when I was in the East, of hearing a class in agriculture ask the professor, who had just returned from a trip West, what impressed him most forcibly regarding the Western soil, and he said, without hesitation, "The lack of humus." And he was right. Our soil, generally speaking, does lack humus. It is hungry for organic material in the form of vegetable matter.

The chief reasons for these soil conditions are our climatic conditions, i. e., sunshine and the lack of summer rains. These are conditions which must be counteracted to a great degree to make it possible for one to get humus back into the soil. It may seem strange that I should say counteract such agencies as sunshine or lack of rain in summer, but it is a reasonable statement. Cultivation or irrigation, separate or together, will counteract these conditions to a great degree. While most of our Western soils do lack humus, it is easier to get it back into our soil than it is in the Eastern States, for the reason that our cover crops may be grown in winter. In this way there is no conflict with cultivation or harvesting, as is sometimes the case in the East where the cover crop has to make its growth during the summer and fall.

It is wonderful to see what the addition of a simple thing like humus will do for the soil. It brings about so many beneficial conditions. I say such a simple thing as humus. It is not so simple, either, as one might imagine. It is extremely difficult sometimes and under some conditions to get organics into the soil economically. Invariably the soil that needs humus most is the hardest proposition. Every farmer should have a practical knowledge regarding humus and its action on soils. He should experiment to find the most economical method of getting it into his soil, as experimenting will reveal the most secrets.

For the farmer or fruit grower who can irrigate, it is not so difficult a problem, but the man who has no water has to figure a different way. He must figure on moisture which comes as rain in winter, and when he can get 25 or 30 inches per year, as we do in this county, it is possible to do great things by cultivation. Under such conditions it is folly to worry or wait for irrigation to come, even though it may be a little better than depending on winter rain alone. Under the conditions, we need organic matter in the soil more than we need irrigation, and it is possible to bring this about without irrigation water. There are a great many farmers who have worked their land in the same old way for fifty or sixty years, and now that it is worn out they call for water, just as if water were some great cure-all. Water will do great things, but it will not do all things. Water alone is not complete plant food. Water, without plant food in the soil, is of no avail. Plant food, and especially that from organic sources, which can be supplied by the farmer is the chief requisite.

Cover Crop in Orchard of Natomas Consolidated.

The addition of organic matter to the soil will make moisture conservation by cultivation more successful, aside from supplying the needed plant food. It also makes possible for a more economical use of the commercial fertilizers, as the soil is made more like a sponge, retaining the moisture, incidentally holding the fertilizers and preventing them from leaching away and getting out of reach.

As has been stated by the associate editor of the RURAL PRESS in previous articles, there are different materials which may be used to supply humus. The most common are manure, straw, and cover crops. Of course, we will all agree that stable manure is best, but it is beyond much consideration because of its scarcity. As far as straw is concerned, it is much as the editor says, very inert and low in plant food value, but as much of the manure we get from the cities contains much straw bedding, very often pure straw can be used with greater economy, especially if the manure must be hauled each day from some livery stable. Undoubtedly cover crops are the best means by which we can hope to supply humus.

There are a great many kinds of crops that may be used for this purpose. The best plant to be used for this purpose must be decided upon by each farmer or by each community, as a crop good in one place might not be a good one in another.

It is the land that cannot be irrigated that is in the greatest need of cover crops and it is the hardest land on which to raise them.

My experiments have been made on worn-out hay lands planted out to orchard. It is bench land and no irrigation is employed. Intensive cultivation is carried on to preserve moisture, which is a success. There is an abundance of moisture in the soil up to the time when the fall rains commence. We carry on cultivation every ten days throughout the summer. In the latter part of July we cultivate deeper and roll im-

(Continued on Page 197.)

Pacific Rural Press

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Aug. 26, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.02	.30	.16	68	52
Red Bluff	T	T	.00	110	66
Sacramento	.00	.01	.00	108	64
San Francisco	T	.07	.01	74	54
San Jose	.00	.09	.03	94	54
Fresno	.00	.03	.00	108	68
Independence	.10	1.70	.00	94	62
San Luis Obispo	.06	.06	.03	90	54
Los Angeles	T	T	.00	92	58
San Diego	.02	.08	.00	84	62

The Week.

It is a great satisfaction to us, returning from long absence, to find the California fruit industries bowling buoyantly along, carrying handicaps lightly, surmounting obstacles and pressing forward to realizations beyond anticipation. It is really very notable to find our deciduous orchards, largely unirrigated, putting up fruit for a 25% increase in shipment after a second short rainfall. It is comforting to find prices good to fine, and the outlook for the season's running exceptionally well to the close of it. This impresses us all the more after seeing how short the old countries and this country east of the Rocky Mountains are of their needs in producing fruit locally and in the hope of ever doing it. We did not see fruit enough to satisfy a mongoose in all our travels. If the critic says we were too early in the season to see it, we reply that we did not see it green, nor did we see the place where it could perch on a tree. We have not time to go into that now, but we will say that, somewhat in despair of fruit, we bought an apple in Budapest for 40 cents. It came from Australia, and we wished to experience the sensation of paying that price for a small apple. It was all brown inside—so we got two sensations for our money. We bought oranges all through northern Europe which would not be counted decent culls at the California packing houses, and some of them came from the Mediterranean and some from South Africa. If California goes on with her process of standardization she will have the call on all the higher demand for citrus fruits in Europe as soon as the Panama Canal opens the way. We shall also do much more with fresh deciduous fruits than anyone can now foresee. The same will also be true of much of the East and of the northern dominion. We feel more assurance of the outlook for our fruit industries than ever before.

The Beginnings of Rural Credit.

We closed our riotous writings on rural credit and co-operation last week, but the subject is really only at its beginning. If someone should say: "You rambled around enough in all conscience, but you did not get anywhere," we should have to plead guilty. The fact is we should distrust our own judgment if we had come back cocksure about conclusions. The subject and its environments are so varied that it will require a lot of thinking and discussion to reach the conclusions which are desirable. On page 102, of our issue of August 2, the preliminary findings of the Commission, of which we were a part, are given. They should be carefully studied by all and discussed by our agricultural societies. In about three months, it is expected, the full report of the Commission will be agreed upon. Pending that, individual contributions of fact and thought will be in order. On another page of this issue a plan which commends itself strongly to Col. Weinstock is printed, and we hope all will consider it. We knew that Col. Weinstock has thought out the matter very carefully and brought to it the fruit of close observation abroad.

The whole subject of facilitating and providing for agricultural credit in this country promises to be the most interesting legislative subject of the immediate future. At present it is much entangled with the currency question and is beclouded thereby. The pending currency question does not go into the depths of the subject of agricultural credit; it is merely on the surface of it. Whatever can be wisely done in helping to move crops should be done, and farmers' hardships in that line removed, but the foundation of the thing belongs far below and must be well laid. We quite agree with President Wilson in his declaration committing himself to rural credit legislation at the next session of Congress. He holds that the matter could not be adequately handled in the present currency bill and that a separate and distinct machinery for the handling of rural credits should be established. All should begin now to see that such machinery is the farmers' own and that it does not go into the manipulation of others.

President Wilson's Declaration.

It is pertinent to place on record President Wilson's declaration, and we hope our readers will stick it in their hats and use it to measure politicians with until something right is written into the laws. These are the words:

> There has been too little Federal legislation framed to serve the farmer directly, and with a deliberate adjustment to his real needs. We long ago fell into the habit of assuming that the farmers of America enjoyed such an immense natural advantage over the farmers of the rest of the world, were so intelligent and so enterprising and so at ease on the incomparable soils of our great continent, that they could feed the world and prosper no matter what handicap they carried, no matter what disadvantages, whether of the law or of the natural circumstances, they labored under. We have not exaggerated their capacity or their opportunity, but we have neglected to analyze the burdensome disadvantages from which they were suffering, and have too often failed to remove them when we did see what they were.
>
> Our farmers must have means afforded them of handling their financial needs easily and inexpensively. They should be furnished these facilities before their enterprises languish, not afterward.

National Rural Banks.

To secure this separate consideration of the rural banking propositions in Congress, Senator Fletcher submits an outline for organization of rural credit, of which a brief abstract is given on another page. The American Commission, as such, only authorizes the statement of findings which we published in our issue of August 2, as stated. It seems to us fortunate that Senator Fletcher, in his Senate bill, gives those interested something definite to think about while the Commission is preparing its report. It also will serve as an assurance to those who have apprehended that the Commission might remand the subject of rural finance to existing banks with the request that they do the best they can with it for the good of the farmers. So far as we could see, from the attitude of the Commission toward its work, this apprehension was unnecessary. There was an earnest desire to see and to understand the provisions made abroad to promote and properly finance farming, and the discussions disclosed no disposition to demur to the conclusion that farming needs financing for its own sake and in its own way, and that existing commercial banking institutions and methods are not rightly constituted to render this service. Just how this can best be done must be developed by study and discussion, but we take Senator Fletcher's bill as an indication that the Commission is correctly motivated and will try hard to do farmers' work.

Rather a Moist Time of It.

Some reader afflicted with a good memory may remember that we reported the discovery of a good deal of politics in European rural finance and apprehended that there would also have to be politics in it in this country. The demonstration of this prophecy has already arrived, and it is more dramatic in incident than anything we saw abroad. Secretary Lane of the Department of the Interior and Professor A. C. Miller, his chief assistant, both of whom we personally know and highly esteem, are swinging around the circle of the Reclamation Districts administering comfort and encouragement to the financially oppressed among Uncle Sam's new wards: the settlers upon the various projects. Thus the chronicler describes one sequence of events: "One farmer, whose crops had been ruined by the breaking of a ditch bank broke down and cried as he told his story to Professor Miller. The assistant secretary proved a sympathetic listener. Making proper use of a raging thunderstorm which broke as he was addressing the home-builders, Professor Miller cried out: 'Though the heavens fall, I should not do my duty if I did not tell you that you have a friend in President Wilson, who is a Western man in spirit, if not by birth. The administration believes that the government should not only not add to the burdens of the farmers, but should lighten them wherever possible. It is a great hardship to farmers to have to borrow money at 10 per cent. We are trying to humanize the Department of the Interior.'"

It was doubtless a moving scene. We feel the moisture of it even here—a thousand miles away and a dry wind blowing. If the farmers work it right they will have all the statesmen on their oratorical knees. It is just that way in Europe.

Great Cry and Little Wool.

It does seem a little cruel to escape from the weeping of the preceding paragraph by reference to President Wilson's reputed attitude toward the wool-growing industry, but we never shrink from pain brought upon another by his transgressions. The tariff struggle persists in Washington, and so far as we know the leaders of the administration persist in treating the gentle, industrious American sheep as though he were a wolf. They declare that next week will see the enactment of free wool, although many of President Wilson's supporters declared, before election, that he never would kill an honorable American industry—and secured many votes thereby, no doubt. But why is it that leaders who declare that the government must be humanized for the Western settler, become almost inhuman by striking at the root of an industry by which Western

settlers have been able to enjoy some degree of prosperity in the newer Western States? We cannot understand it, and lack of understanding, perhaps, allows us to fall into a degree of complacence over a hot debate in Congress, in the course of which Senator Brandegee declared President Wilson would turn a political somersault if he signed the bill and the people would place "one little wreath of lilies of the valley on the Democratic corpse three years hence." The sheep owners of the West may sometimes think they are so far away that they have no chance, save to suffer. They are mistaken. People in endangered industries all over the country are planting lily of the valley roots, right now! The South is particularly full of them.

The Gravenstein Apple.

The Gravenstein Apple Show at Sebastopol was a great success last week and did the State credit. It is too bad, however, to stultify ourselves by unwarranted claims which make us ridiculous. What excuse, for example, can there possibly be for this editorial utterance in a prominent daily journal. "The Gravenstein apple is a product of California. It is the best of all the early apples, a highly colored, fragrant, toothsome fruit popular with all who have had the pleasure of tasting it. It originated as a distinct variety near Sebastopol in the Russian river valley, to which it has given fame and fortune. Old Sonoma never had a fairer child and none which promises more wealth, pleasure and health to mankind. Other sections grow choice apples, but the Gravenstein belongs by right of birth to Sonoma."

Of course the Gravenstein apple was named in Germany about 1750, where a tree, believed to have been the original was found about that time at Gravenstein in Holstein, whence came its name. The apple was brought to the vicinity of Albany, New York, about 1826, and later became widely distributed in this country, coming to California, with many other desirable varieties, during the days of our horticultural pioneers. In view of these facts the claim of California origin simply makes us ridiculous in the eyes of people who know fruits. If the writer making it had been intelligent he would have made a higher and more significant claim, viz.; that the Gravenstein apple, like a number of other fruit varieties, reaches greater size, beauty and commercial value in California than it ever could in the land of its birth or in any other country to which it has been taken. That would have been a fact worth pointing out.

Those Balkan Prunes.

It is pardonable for a German merchant coming to California to buy prunes to gorge a local reporter with talk like this: "The rich prune districts of the Balkan countries are just recovering from the effects of war, the men have returned to their orchards from the battlefields, and are ready to place heavy crops, raised this year by the women, on the market at almost any price, he says. They are willing to realize almost any money for the growing crops, and there is an abundance of labor, since the prisoners taken in the late war are all put to work in the fields under military superintendence. The crop this year is heavy in the Mediterranean countries, though perhaps of a quality below the usual standard."

The intended effect of these statements, which may for all we know be true enough in their way, is to create the impression among Santa Clara valley prune growers that their product is menaced by Bosnian prunes. The story should have no such effect at all, because the Balkan prunes are not in the same class with California prunes and are not bought by the same classes of European people. The prices at which Balkan prunes can be profitably sold make it impossible for our fruit to compete with them. Our fruit is of distinctly higher grade and price and goes to different customers, to whom the Balkan product would not appeal. It is true, of course, that in the presence of an oversupply a bulk of low-grade goods may depress everything of its kind, but that does not apply this year, for California prunes will be reduced in quantity, advanced in grade, and Germany should pay well for all she gets of them.

Queries and Replies.

Querists must submit full names and addresses.

Bermuda Objectionable.

To the Editor: I would like your opinion on the possibility and advisability of the use of Bermuda grass as pasture for summer to supplement burr clover and alfilaria in winter on the cheap hill pasture lands along the coast or the foothill ranges of the Sierras. Stock like it and do well on it, and I have noticed it growing in places where it had no water but the little rains of winter in southern California. So the question occurred to me, Why should it not be a profitable pasture for the dry summers on the coast or foothill ranges of the State?—B. M. Elliott, Heber.

Bermuda grass will not make summer growth enough on dry land to make it worth having. It will not make much growth in the rainy season because of frost, and if it has possession of the ground it will not allow either burr clover or alfilaria to make such winter growth as they will on clean land. Besides, this grass is generally counted a nuisance because it will get into all the good cultivated land and it is almost impossible of eradication. Bermuda grass is of some account on alkali land where it finds moisture enough for free growth. We would not plant it in any other situation.

Figs Near Oakland.

To the Editor: On my place at Elmhurst I have three fig trees, a White Genoa, a Smyrna, and a California Black. They have been growing sixteen years, bear quite heavily, but I have not got one ripe fig in all those years. The figs get to be about the size of a medium-sized apricot and then drop off. They are fine-looking trees, and one of them, the White Genoa, is a beauty. Can you tell me what I can do to make the fruit mature? They grow on black adobe soil.—George R. Short, 5947 Mills St., Elmhurst.

The trouble with your fig trees is probably the lack of sufficient summer heat to properly ripen those varieties. We are not aware that the fig is satisfactory anywhere near the Golden Gate. The nearest place where it ripens well is near Niles and Mission San Jose, where the summer winds do not reach and where the total summer heat is very much greater. It is possible some early variety requiring less heat for maturity might succeed. We doubt if the varieties you have can be made satisfactory for anything but shade and ornamental purposes. If, however, you bring the matter to the attention of G. P. Rixford, U. S. Fig Specialist, 1813 Pierce street, San Francisco, he may like to try out some caprification experiments on your trees.

Almond and Peach.

To the Editor: With water-table at 18 feet, which root is best for almond trees? The experience around here is that the peach root starts best. I would like to know which root is most durable, what the life of the peach root is and what the life of the almond.—A. S. L., Willows.

It is not merely a question of depth to water, but of character of the soil above the water. Neither of the roots will stand heavy soil which holds water too long, and both enjoy a free loam which drains readily down to the water-table or bottom water. If the soil is rather sandy, letting the water down very quickly, the almond has better speed and wind in getting to it than the peach. If it is finer and still well drained the peach will do well, and the almond enjoys that also. The almond probably can be counted on to stand coarser soil and greater drouth than the peach. The almond under such conditions will outlive the peach, probably, but both of them will live twenty to thirty years or more if pruned in the head to get enough new wood and the trunk is kept from sunburn. Aside from this we should choose the almond root for the almond.

Plowing Light Soil Dry.

To the Editor: I have about fifty acres of land that has been in oats for a good many years. Usually it has been plowed to a depth of four or five inches and then the next year it would get only a discing, and so on year after year. It is a light soil, no adobe, and is rather dry. This year it was in black oats and only averaged one ton of hay per acre. Now about September 1st I can hire a traction engine with disc plows to plow the whole forty acres. Do you think it would be a good plan to go on and dry-plow this to a depth of from eight to nine inches and let it lie until we get rains enough so it is all right to seed? Some say it will spoil the crop for next year, but the year after the crop will be much better.—Subscriber, Napa.

Deep plowing before the rains is of course safer for the next crop than deep plowing later in the season, because you get the full season's rainfall to settle the soil into suitable compactness. It seems to us eminently safe and desirable to do as you propose—simply working shallow, to kill weeds, when you put in the seed.

Whiskers on Prune Trays.

To the Editor: What method do you advise for killing and removing the whitish mold that forms on trays used for drying prunes? These are redwood trays, new last season. In some cases where the juice ran out last year on the tray, a whitish mold shows this year. This, I fear, may lead to earlier molding of the fruit in case of prolonged wet weather. Would sunning the trays be effective, or washing in hot water, or is there some suitable fungicide?—Reader, Coyote.

Good hot sun and dry wind will clean the trays. The spores of such a common mold are waiting everywhere, so that your fruit would mold anyway if conditions were right. Still, scalding the trays for cleanliness and a short trip through the sulphur box for fungus-killing is commended to those who have the nerve for it.

Glossing Dried Prunes.

To the Editor: Will you kindly give the method for giving the gloss to dried French prunes?—F. M. M., Santa Cruz.

There are various methods. One pound of glycerine to 20 gallons of water; a quick dip in the mixture very hot gives a good finish. Where a clear bloom, rather than a shine, is desired, five pounds of common salt to 100 gallons of water, also dipped hot, gives a good effect. Some use a thin syrup made by boiling small prunes in water (by stove or steam) and thinning with water to produce the result desired. Steam cooking avoids bad flavor by burning. The salt dip is probably the most widely used.

For Feed and Erosion.

To the Editor: I am just beginning to harvest a number of acres of silo corn. When harvested, the ground will be left without sod or weeds, and on the slopes it looks as if the winter rains would cause bad erosion. Now, what can I plant with the first fall rains that will furnish (a) food for horses and cows, and (b) that I may use as green manure?—Jack London, Glen Ellen.

You will find the article on the first page of this issue very suggestive.

Orchard Hints to Beginners.

Walnut Culture.

To the Editor: I am thinking of buying a small ranch, say 10 acres, for the purpose of planting out walnuts, and do not want to make any mistake in choosing the locality; I do not want to be over 25 or 30 miles from Oakland or San Francisco. In my copy of your book, "California Fruits and How to Grow Them," you do not state localities best adapted to walnut culture. I am not sure whether the climate is not quite an important consideration in their successful growing. My intention was to plant the black nut and at the end of two years to graft with the Franquette. If you would kindly give me two or three localities in their precedence it will give me some guidance and would greatly oblige.—Beginner, Berkeley.

Probably the best place to grow walnuts within twenty-five or thirty miles from Oakland or San Francisco is across the hills in the valleys of Contra Costa and Alameda counties. The walnut succeeds through quite a wide range of climates, for it is growing profitably in the great valleys north and south and in the coast valleys. It would, of course, not be desirable to plant walnuts in very frosty places, that is, in the bottoms of small valleys. This matter is discussed in the chapter on climates in "California Fruits" which you say you have. While the nut accepts quite a range of climates, there is no profit in planting the tree on poor soil nor on soil which is shallow and therefore liable to dry out—unless irrigation can be had to keep the moisture just right, neither too much nor too little. It is perfectly feasible to plant as you propose and graft the English walnut on the California seedling when the latter is two years old or even older, and the older the tree, the easier is the grafting. Grafting processes are fully discussed in "California Fruits."

Cover Crops for Corning.

To the Editor: I have ten acres which I planted to fruit trees this spring. I wish to put in a cover crop this fall for next spring's plowing. What is the best seeding for this vicinity? I figured to plant vetch and rye, but cannot get satisfactory information how vetch does here. I irrigate from a well which supplies a two-inch pump. The soil is part gravelly clay loam and part gravel. All hold moisture well, which turns to surface at present time when cultivating. I plowed early and put on a drag each time after stirring soil.—P. M. M., Corning.

We would not put in rye unless you plan to cut the green crop for feeding. It will make the growth hard to get under among small trees. Oregon vetch ought to give you a good cover; so would field peas and burr clover. We speak provisionally for lack of actual observation. Perhaps some Corning reader will help us out. With such moisture as you describe you ought to sow next month and get a large early growth to plow in in February perhaps.

Is It Bad to Blast?

To the Editor: Can you give me any information on the following points? Does blasting ground for walnuts and other trees poison the ground in any way? Are nitro-glycerin powders to be preferred to black powder, or vice versa? Some of the young walnut trees I shot (½ stick 30% giant powder placed 6 feet from tree and 5 ft. down) seem to be on the decline, while trees unshot in adjoining rows are doing well.—S. A. B., Berkeley.

To the Editor: I am to plant olive trees next spring. Would you advise blasting in the gravel? —P. N. W., Corning.

Some of our technical contributors can expound the powder chemistry for us in its relation to root condition and growth. We have acquired the habit of a supreme court judge who does not undertake to decide all the law in a case when he can reach a decision on one point. This point would be that you can knock out a tree by blasting when you open up the subsoil so that moisture enough is not held within reach of the roots. In a year of short rainfall, or preceding a short rainfall, it is dangerous to blast because there will not be water enough to settle the soil to a condition of adequate retention. When that is the case a tree will suffer, while a tree over a more compact subsoil will not—which seems to be your case.

Blasting gravel or sand, or soil over such layers, is always dangerous, unless the coarse materials be so compacted or cemented as to constitute an impervious layer. Blasting ordinary gravel subsoils is to render them more dangerous and liable to drying out than they naturally are. You can usually blast hard things to advantage if you have water enough afterward; blasting loose things is unreasonable. Blasting powder has to be used like other agricultural agencies—mixed with brains.

HINTS ON PACKING PEARS.

C. E. Whistler of Medford, Oregon, gives his way of packing pears, in the Fruit and Produce Distributor:

Pick the pears when the stem snaps on a short upward turn of the fruit, while it is firm and hard. Use the regulation pear box and wrap each separate fruit in wrapping paper. The size generally used is 8 by 10 inches.

In packing, raise one end of the box about 5 inches higher than the other, to have the fruit retain position in row, beginning at low end toward the packer.

Place the wrapped pear in the box with the excess paper gathered well together and placed underneath the pear, forming a cushion for the fruit to rest upon, and place in the box with the calyx end toward the end of box next to the packer, in the left hand corner, then place two pears at equal distance between that and the right corner. The next three pears place with stem end reversed in intervening spaces, and the remainder of the layer will have all stems toward the packer.

Begin each layer in the same manner as the first, except that you begin in the opposite corner each time from the layer just preceding. By this method the square pack is avoided, which should never be employed.

The 3-3 pack will give six rows up the box. They may be four pears long, which would give 24 pears to the layer, or 120 pears to the box; or 3 rows 5 pears long, and 3 rows 4 pears long, which would give 27 pears to the layer, or 135 pears to the box; or there may be six rows of 5 pears to the row, or 30 to the layer, or 150 pears to the box; or 3 rows 5 pears to the row, and 3 rows 6 pears to the row, or 33 pears to the layer, which gives 165 pears to the box; or 6 rows with 6 pears in the row. This gives 36 pears to the layer, or 180 pears to the box. This is the smallest size that should be packed in five layers.

The four-layer packs are made by what is called the 3-2 pack. It is begun by placing a pear in each corner of the box and one in the center. This divides the open space into two equal spaces, and then 2 pears are placed here, then 3, then 2, then 3, and so on till the layer is filled.

This will give 5 rows of 4 pears each, or 20 pears to the layer, or 80 pears to the box; or 3 rows of 5 pears each, and 2 rows of 4 pears each, or 23 pears to the layer, or 90 pears to the box; or 5 rows of 5 pears to the row, or 25 pears to the layer, or 100 pears to the box; or 3 rows of 6 pears each, and 2 rows of 5 pears each, or 28 pears to the layer, or 110 pears to the box.

Pears smaller than 180 to the box may be packed in 6 layers, by what is called the 4-3 pack, which may be studied out from the foregoing.

The bulge on a box of pears when nailed should be one inch on each side. This is obtained by placing the pears a little more upright as you near the center of the box and gradually flattening as you approach the other end. The box, when packed, should weigh 52 pounds and contain 46 pounds of pears.

The most popular size for Bartletts is 135 pears to the box. But this seems to vary a great deal, depending on whether you have them or not.

Fifty boxes per day is a reasonable day's work per packer, for which the average price is 5 cents per box.

The pears in the box should be as nearly uniform in size as possible, and two grades should cover all shipable pears.

Great care should be exercised in handling the pear, both before and after packing. When packed the box should always be handled on the side, never on the swell or on the end. Just good common sense is all there is to it.

INOCULATION FOR ALFALFA.

We have often stated the fact that, as a rule, California soils already possess the bacteria needed to establish the thrift of the alfalfa plant, because, probably, of the wide spread of burr clover and a host of native clovers. It is likely that the results of experimentation in Nebraska are widely applicable to this state also. The following is an outline of conclusions by the Nebraska Experiment Station:

The results of co-operative tests during the past two years with cultures of bacteria have shown that in most instances artificial inoculation is not necessary to the production of a good crop of alfalfa in Nebraska. In localities where alfalfa has been successfully grown for a number of years such inoculation is probably a useless expense.

There are two general ways of inoculating the soil. The best is by spreading soil from an old, well established and vigorous alfalfa field, or from a sweet clover patch. If a few hundred pounds of this soil is scattered on land which has been properly prepared and manured, and if the soil has not been exposed to the sun or allowed to dry out, good results will usually follow. The other method is by the use of cultures. There are now a number of reliable companies manufacturing the culture. It comes in bottles and is used on the seed. The ordinary cost of a sufficient amount to treat the seed for one acre is about $2. The United States government also furnishes the culture in limited quantities. Complete directions always accompany the culture. Soil inoculation is more certain and not as expensive as the cultures where there is an old and vigorous alfalfa field near.

If alfalfa has never been grown in the community, or on the farm, or if it is not successful, it is usually advisable to inoculate. Wherever alfalfa is showing, during the first year, a weak yellowish growth either in spots or over the entire field, it may be of advantage to inoculate the soil. This can be done by applying to the new seeding soil from an old field, or by treating some soil mixed with well-rotted manure with the culture and applying this with a manure spreader. Where the speed of the spreader cannot be sufficiently reduced, the mixture may be scattered with a fork or shovel and the field harrowed."

Summary.

The use of farm manure in proper amounts and properly applied is to be strongly recommended.

Where any difficulty is experienced in securing a good stand or vigorous growth of alfalfa, inoculation is recommended.

Inoculation with soil from a well established alfalfa field gave uniformly better results than were secured by use of liquid cultures.

SPRING AND WINTER RYE.

To the Editor: Answering a letter from W. A. Cogwell regarding winter and spring rye, which you hand to me, I am unable to state positively whether the sample submitted is spring or winter rye, but the indications are that it is spring rye.

As in the case of wheat, winter and spring rye are not necessarily different varieties. Either of them may become adapted to winter and spring sowing after one or two years and under suitable culture methods. As a general rule, spring rye is only sown where it has been impossible to get the winter rye in on account of the presence of the last crop or conditions of the soil. Where rye can be grown at all, the winter sowing is, as a general rule, better because the yield is larger and the winter has a tendency to tiller more abundantly than the spring rye; consequently, it covers the ground more thoroughly and is not infrequently used for winter pasture. In my judgment, the winter rye would be more suitable to the elevation and soil conditions at Placerville.

JOHN W. GILMORE,
Professor of Agronomy.
University of California, Berkeley.

Government Methods of Combating Pear Blight.

The Department of Agriculture has received notice by telegraph from citizens in the State of Washington that certain people are spreading the idea that the pear blight is not a bacterial disease, and that the Department's recommendation that pear blight can be dealt with by cutting out the diseased portions of trees is not an effective measure.

In the fear that these unscientific opinions may stop orchardists from following the highly successful practical measures recommended by the federal specialists, and thus lose their own orchards and spread the disease among neighboring orchards, the Department has issued the following special statement:

"That pear blight is a bacterial disease of the pear tree is not open to question. The scientists have clearly established the existence of these bacteria by means of microscopic examination, and have reproduced the disease by inoculating fruit trees with them. The germ is the bacillus amylovorous. It is an oval-shaped body, and is 1/18,000 of an inch long and 1/25,000 of an inch across, and can be clearly seen with a high power microscope. Moreover, the scientists have raised these bacteria in their laboratories and have used them a large number of times in experiments to infect healthy trees and fruit. Wherever this bacillus has been introduced into a healthy tree or fruit the pear blight has followed. The scientists also have proved that the pear blight can be communicated from the blossoms of an affected tree to healthy trees by bees and other insects, and that the blight that is held over through the winter can be communicated to healthy portions of the same tree or to other trees by flies or other insects.

"Pear blight differs radically from peach yellows in the way it affects a tree. The peach yellows does not show itself outwardly in a tree until the entire tree is affected and cannot be saved. The pear blight, on the other hand, has a purely local effect and attacks certain blossoms, twigs, branches, or a section of the bark, and leaves the rest of the tree uninjured except where girdling has occurred.

"In thousands of orchards, and in the case of hundreds of thousands of pear trees, especially in California and Oregon, particularly in the Medford district, it has been proven that by cutting out the portion of the tree affected by the pear blight and washing the cut with a solution of one part of corrosive sublimate (a highly poisonous substance) to 1000 parts of water, orchardists can save most of the individual trees and prevent the spread of the disease throughout their orchards. It therefore strongly urges orchardists in districts affected by pear blight to continue to cut out affected portions of the trees and wash the cuts with this mixture. In cutting they should wash their tools in this disinfectant, so that the tool itself cannot communicate the bacteria to healthy parts of the trees. Especially orchardists are strongly advised to go over their orchards very carefully in the fall and cut out all cases of hold-over blight, in order to prevent the spread of infections in disease trees to the communication of infection to other trees in the blossoming period.

"In addition to the cutting out and disinfecting process, the Department advises orchardists to take steps to keep their trees healthy and strong, but not over-vigorous, so as to be highly resistant to pear blight. It warns orchardists to be careful in the use of manures and fertilizers around fruit trees, as anything which increases the rate of growth of the tree hastens the spread of the localized infection.

"The Department has thoroughly tested all known or suggested measures for coping with this blight. It has found the cutting out and washing with the solution the one reliable and practical measure, and recommends it as a fully tested and successful remedy.

"This cutting out method will not save all trees, nor is it effective with certain varieties of pear trees which are particularly subject to the ravages of the pear blight. It has, however, saved the pear industry of California and portions of Oregon."

COVER CROPS BY RAINFALL.

(*Continued From Page 192.*)

mediately. The land lies for about two weeks and is cultivated and rolled again. By this time it is late in August when rye is drilled down to moist soil. This deep cultivation and rolling is employed to bring the moisture nearer the surface to receive and germinate the rye, and it is very effectual. The rye commences to grow and gets started before the rains begin and makes a fair growth. By spring it has made a good cover crop to be turned under.

One must not expect a heavy crop the first year, as the soil is in poor condition and cannot produce a good crop, but each crop that follows is better than the one before it. We must make a start toward improvement, even though it may be a feeble one.

We use rye because it grows better during our cool winters; it makes better use of the late summer moisture in the soil; it grows better than any other cover crop on worn-out soils. After a few rye crops are turned under, the soil commences to liven up. It becomes warmer during the winter and the rain does not run it together so much. This makes it possible to sow burr clover or vetch instead of rye, plants which have a twofold value. They not only furnish humus when plowed under, as with the rye, but they go a step further and convert atmospheric nitrogen into plant food and store it up in their roots to be used by the tree or plant after decomposition takes place. These are among the best plants which can be used for a cover crop on worn-out soil, but much of our soil is virtually too low in plant food and in too poor physical condition to produce these last two crops on the start.

After a cover crop has been turned under it must not be turned up again. If it is brought up to the sun it will be burned out of the soil in short order and lost. Get it down fairly deep and get it well covered. Do not cultivate so deep early in the spring as to pull it out before it has rotted. It is well to compact soil after cultivation to prevent the organic matter from drying out. Continuous deep cultivation when not managed in the right way consumes humus rapidly, especially in young orchards and open fields. In old orchards it is not so rapid, as the shade from the trees affords protection.

It is true it will take a long time to get as much humus into the soil as there was when the land was new, but we do not have to get this much in before we realize benefits. One cover crop makes a great difference in the soil, and by the time perhaps five crops have been turned under a farmer would scarcely recognize his soil if it were not that he had seen the gradual change for better year by year. But do not misunderstand me and stop after you have put five cover crops under, but keep on planting and turning under, especially if you have bench land. There is little danger of getting too much humus into the soil through the planting of cover crops in orchards anywhere in this or other Western States.

If you have land that does not readily produce a successful cover crop, either volunteer or from sown seed, it is a very good indication that the land needs humus. Of course, this would not necessarily hold good in old spreading orchards, as it is sometimes hard to get a cover crop started on account of the shade. However, many of our old orchards are sorely in need of humus. Start the cover crops when the orchard is young, as this is the best time to get good stands, and keep up the good work as long as possible.

Do not get the impression that because your land may be strong enough to produce good cover crops that it is not in need of them. I know of instances on the heavy river lands where the soil is very productive, yet this same soil after a few crops of rye have been turned under is in a better physical condition. It is easier to work and produces better crops than before.

Plowing Under Green Rye for Humus in Shasta County.

IMPORTING FOREST SEEDS AND SEEDLINGS.

Figures gathered by the Federal Quarantine Board of the Department of Agriculture show that during the past fiscal year 3,779,041 growing trees and 15,040 pounds of tree seeds were imported into the United States. The trees include, say the members of the Board, valuable species that do not grow in the United States and stock which can at present be bought more cheaply abroad. The tree seeds imported are largely for the purpose of reforesting land, though in a number of cases they are used in ornamental planting on individual estates.

France leads in the number of growing trees sent here, with a total of 1,782,255. Germany is second, with 849,245, and Holland third, with 690,632. Imports are made from 13 other countries, including India, Japan, and Australia.

The trees and shrubs imported are chiefly evergreens, such as pines, spruces, and firs, and broad-leaf plants—oaks, maples, etc. The majority is stock of foreign origin, though in a few cases cultivators abroad, through a special selection of attractive forms of our native trees, have developed them to such an extent as to make them desirable to purchasers here.

Besides more than seven tons of tree seeds, many thousands of pounds of perennial and annual plants, bulbs, and fruit stock, as well as ornamental shrubs, are imported. The greater part of the tree seeds, or more than 7000 pounds, come from Germany.

A 115-foot lookout tower on the Sitgreaves National Forest, Alaska, just constructed by forest officers, was built entirely of logs and without the use of hoisting machinery other than ropes and tackle blocks.

Facts About Egyptian Cotton.

Now that California is producing a considerable amount of cotton, through the energy and enterprise of the Imperial Valley farmers, general matters about cotton become of much local interest. The production of long stable cotton in Egypt, whence our seed came, is particularly pertinent. The American Commission on Co-operation and Rural Credit sent a committee, consisting of Clarence Ousley and J. S. Williams of Texas to investigate Egyptian production and this is from their report:

Egyptian cotton cultivation offers no instruction whatever for America for skill, science, or other elements of economy or efficiency, though irrigation there, as elsewhere, demonstrates the more stable and dependable output of the soil with a regular water supply as compared with production dependent on uncertain and variable rainfall. The rich delta lands of the Nile, it is true, yield more than the average of American land, acre for acre, and the Egyptian cotton, of course, is superior in quality to the short staple which constitutes the greater part of our crop, though our long staple, or sea island cotton, is superior to the Egyptian. At the same time our progressive farmers who fertilize and cultivate intelligently produce about as much short staple per acre as the Egyptians produce, though our long staple is not so prolific as the Egyptian.

Nor can it be said that the Egyptian producers market their crop to better advantage or even to equal advantage, inasmuch as they sell their cotton in the seed and have no accurate idea of the commercial value of the seed or other byproducts. On the other hand they suffer no loss from "country damage" because there is little or no rain during the picking and ginning season and the cotton is well out of the hands of the producers before the period of light winter rains which usually fall in January and February. Nor is there excessive waste, or toll or graft in sampling.

But while Egypt offers no instruction in cultivation, she constitutes no menace of over production, since it may be fairly estimated that not more than 25 per cent of available acreage remains to be developed for cultivation by the reclamation of sea marshes, and this work can hardly be accomplished in less than twenty years. Allowing for such possible development and for possible improvement in methods of cultivation, it is safe to assume that Egyptian production will not increase within any calculable time faster than the normal demand for this particular quality of cotton. The British advisory government of Egypt is making extensive experiments in cotton growing in the Soudan, and even if that region should equal Egypt's output in another generation, the total result in our judgment would hardly outrun increasing consumption.

The methods of baling, sampling and marketing the lint—all effected after it leaves the farmers' hands—may be studied with profit both by way of teaching us to save waste and by way of exhibiting the excessive charges of middle men who are the plague of agricultural Egypt as of agricultural America.

Cost of Production.—Egypt's comparatively low cost of production, notwithstanding her antiquated methods of cultivation, her heavy expense of conversion from seed cotton to spinnable lint, is a matter of serious concern to America, for Egypt is able under present conditions to produce her superior quality of cotton, worth now 18 to 20 cents a pound, at about 12¾ cents a pound, compared with American cost of 10 to 12 cents a pound, worth now 11 to 12½ cent. We attach a detailed calculation, made for the American Consul at Alexandria on May 16th, by one of the foremost producers of the country and confirmed by us in all substantial elements:

ESTIMATED COST OF PRODUCING 400 POUNDS OF COTTON IN EGYPT.

Three ploughings and ridgings	$ 5.00
Labor, sowing seed and hoeing ridges	.75
Labor, watering (if by gravity)	.75
Labor, watering (if lift cost of turning Dutch wheel)	1.50
Cost of seed, 55½ pounds	1.25
Hoeing, three times	3.50
Picking	3.40
Worm picking (varies)	1.00
Manure, 440 pounds superphosphate	3.20
Pulling stalks and leveling ridges	.50
Rent of land	30.00
Total	$50.85

Labor.—It must be understood that the labor herein reckoned is paid at the rate of 15 to 20 cents a day for adults and 5 to 10 cents for children, and the calculation applies to all who are engaged in the work of actually tilling the soil, whether as owners, tenants, or hired workers. Paying the same labor at the cheapest rates paid to unskilled American farm laborers would more than double the expenditure and the cost of producing Egyptian cotton would far exceed the current market price of the commodity. On the other hand, if modern methods of production were used the present cost would be reduced twenty-five to fifty per cent. As the case stands, the average tenant or small owner with three or four children cultivates about .... acres of land which he plants one-third to one-half with cotton, under more or less intelligent rotation, and the remainder in feed and forage crops. The average yield for Egypt, during the last few years, may be reckoned at 450 pounds to the acre, so we may say in round figures that the cotton output of the average peasant family—all of whom work at cultivating, or attending the animals or otherwise—is about 1,500 pounds which at 5 cents a pound profit will make only $75.00 a year for accumulation or for creature comforts with which the native Egyptian family now has no acquaintance whatever.

Not Progressive.—It does not appear probable that the Egyptian peasantry, who are the actual cultivators of the soil, will require higher wages or attain to materially better living in any near period, for they are without keen aspiration and they are multiplying at a greater ratio than the increase of production. It would be interesting from a sociological standpoint to consider the reasons for this industrial and social inertia, but to do so would extend this report beyond proper limits, and we can only submit the bald fact that the "man with the hoe" in Egypt is standing still, and therefore that there is no early prospect for such increase of pay or such betterment, of living as will materially enhance the labor factor in the cost of production.

This being accepted, American cotton growers must face the fact that one million five hundred thousand to two million bales (500 pounds) of Egyptian cotton a year are produced to a cost approximately no greater than American cost, and yet the Egyptian cotton, by reason of superior quality, sells for about six cents a pound more. In other

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words, a decline of three cents a pound below the current market price would still leave a fair profit to Egyptian producers and would not cause any reduction in the Egyptian output, while such a decline would carry American cotton below the cost of production, and we know from sad experience how difficult it is under present methods and conditions of tenant farming in the United States to adjust supply to demand. Therefore it behoves American cotton growers to reduce the cost of production by more intensive cultivation, by the use and development of varieties of superior staple, and especially by eliminating the waste and graft in American methods of sampling, baling, and marketing.

Col. Weinstock's Plan for Rural Credits.

Our California colleague on the American Commission for the Study of European Agricultural Co-operation and Rural Credit, Col. Harris Weinstock of San Francisco, has carefully prepared a plan for organization of rural credit facilities in this country for which we bespeak earnest consideration. It is as follows:

SELF-KILLING MORTGAGES.—The ideal amortization land mortgage system for the United States must embody the following objectives (by amortization is meant the repayment of a mortgage in small annual amounts spread over a long term of years):

(a) Perfect safety to the investors in amortization mortgage bonds;

(b) Simplicity;

(c) Directness in dealing with borrowers;

(d) A minimum cost for operations;

(e) Perfect confidence in such mortgage bonds on the part of the financial world;

(f) The lowest market rate of interest to the borrower;

(g) The longest possible number of years over which to spread repayment;

(h) No lessening of initiative on the part of the borrower; the system must not be a burden to the government.

POSTAL SAVINGS FUNDS AVAILABLE.—The following proposed amortization land mortgage system closely approximates these objectives:

1. That the postal savings bank laws be amended authorizing the postal savings bank to receive long-term deposits for such periods as may hereafter be determined upon, as well as to continue receiving "call" deposits, the "call' deposits to continue to be dealt with as now provided by law; the term deposits to bear such rate of increased interest as may hereafter be determined, and to be used in buying amortization land-mortgage bonds.

2. LOCAL CREDIT ASSOCIATIONS.—That whenever and wherever there are a sufficient number of citizens in a community or State who desire to avail themselves of cheap money on long-term repayments, they may organize a local credit association with such membership fee as may be by them agreed upon, not to exceed, say, $100, which is to be paid into the association in such installments as may by the members be determined; the credit association to be organized under such rules and regulation and in accordance with such provisions as may be established by Congress.

3. That the credit association take amortization mortgages on the lands or properties of members, payable in annual installments up to say thirty-three (33) years, on a basis not to exceed 50 per cent of its value. Such value to be determined by such expert appraisement as will be satisfactory to the postal savings bank department.

4. That the postal savings bank department be authorized to place in various parts of the country sums of money, hereafter to be determined, taken from its term deposits, with established and reputable banks, said deposits to be used in the manner set forth in the next paragraph.

5. That the credit association issue guaranteed bonds to cover the face value of such mortgages as may be taken by it on the lands of its members. Said bonds to be bought by said banks having on deposit moneys transferred by the postal savings bank department to be used for such purposes. Said bonds to bear the same rate of interest as may be paid by the postal savings bank department to its depositors, plus, say, one-half per cent to cover the cost of postal savings bank administration, plus, say, 1 per cent as compensation to said established and reputable banks for their services, plus the annual amortization payment.

6. That said land mortgage bonds, when properly indorsed by the local banks, may be cashed by the postal savings bank department whenever local banks may require additional moneys for the purchase of additional land mortgage bonds.

Under this plan the postal savings bank department will be secured by (a) margin of fifty (50) per cent in the value of the land; (b) the reserve fund created by the membership fees; (c) the stockholders' liability of the members of the credit association; (d) the amortization sinking fund; (e) the local bank purchasing the land-mortgage bonds.

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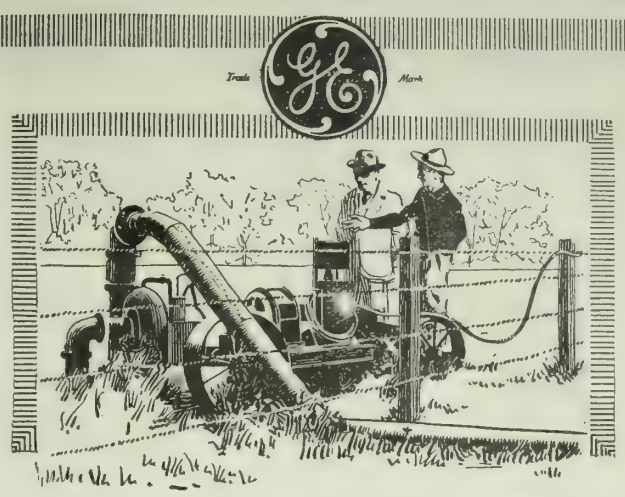

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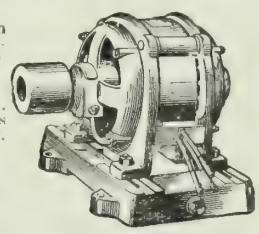

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SAMSON IRON WORKS

STOCKTON, CALIFORNIA

How New Plants May be Made.

[By LUTHER BURBANK, Santa Rosa, Cal.]

The more usual concept of the formation of species is by slow variations so well known as the Darwinian theory, which, though attacked from every point, still is and must always in the main be accepted, for without question it gives the fundamental principles of evolution as had never been done before. Yet the boundless amount of research along these lines during the last half century has developed strong new sidelights which illuminate, and in some cases compel a slightly different view of some of the suggestions of the master Darwin.

During the period of forty years that I have been experimenting with plant life, both in bleak New England and in sunny California, extensively operating on much more than 4,500 distinct species of plants, including all known economic and ornamental plant forms which are grown in the open air in temperate and semi-tropic climates, as well as many of those commonly grown in greenhouses, and numerous absolutely new, not before domesticated, and on a scale never before attempted by any individual or body of individuals, numerous general principles have pressed themselves forward for discussion and observation. Only one of these can be discussed at this time, and this briefly, more as a text for further observations and experiments than as anything like a full view of this highly interesting mode of species formation.

In the first place, let me say that our so-called species are only tentative bundles of plants, no two individuals of which are exactly alike, but nearly all of which quite closely resemble each other in general outside appearances and in hereditary tendencies. Yet no one can tell just what the result will be when combinations of these inherent tendencies are crossed or subjected to any other disturbing factor or factors. Like the chemist who has new elements to work with, we may predict with some degree of accuracy what the general results will be, but any definite knowledge of the results of these combinations is far more difficult, even impossible, as the life forces of plants and animals act in infinitely more new directions than can any ordinary number of combinations of chemicals.

Only a few years ago it was generally supposed that by crossing two somewhat different species or varieties a mongrel might be produced which might, or more likely might not, surpass its parents.

The fact that crossing was only the first step and that selection from the numerous variations secured in the second and a few succeeding generations was the real work of new plant creation had never been appreciated; and today its significance is not fully understood, either by breeders or even by many scientific investigators along these very lines. Old tailings are constantly being worked over at great expense of time and small profit, while the mother lode is repudiated and neglected.

Plant breeding to be successful must be conducted like architecture. Definite plans must be carefully laid for the proposed creation; suitable materials selected with judgment, and these must be securely placed in their proper order and position. No occupation requires more accuracy, foresight and skill than does scientific plant or animal breeding.

As before noted, the first generation after a cross has been made is usually a more or less complete blend of all the characteristics of both parents; not only the visible characteristics, but an infinite number of invisible ones are inherent and will shape the future character and destiny of the descendants, often producing otherwise unaccountable so-called mutations, saltations or sports, the selection and perpetuation of which give to new plant creations their unique forms and often priceless values, like the Burbank potato produced thirty-six years ago and which is now grown on this western coast almost to the exclusion of all others (fourteen millions of bushels per annum, besides the vast amount grown in the eastern United States and other countries), or the Bartlett pear, Baldwin apple, and navel oranges, all of which are variations selected by some keen observer. Millions of others are forever buried in oblivion for the lack of such an observer.

But in this paper I wish to call attention to a not unusual result of crossing quite distinct wild species which deserves the most careful analysis, as it seems to promise a new text for scientific investigation, especially on biometric lines. The subject was most forcibly brought to my attention twenty years ago by the singular behavior of the second generation seedlings of raspberry-blackberry hybrids. By crossing the Siberian raspberry (Rubus crataegifolius) with our native trailing blackberry (Rubus vitifolius), a thoroughly fixed new species was summarily produced. The seedlings of this composite Rubus (named Primus), though a most perfect blend of both parents, but resembling neither, never reverted either way, all the seedlings coming much more exactly like the new type tnan do the seedlings of any ordinary wild Rubus. Many thousand plants have been raised generation after generation, all repeating themselves after the new and unique type. No botanist on earth could do otherwise than classify it if found wild as a valid new species, which it truly is, though so summarily produced by crossing.

Since the Primus species was originated, numerous similar cases have attracted attention, such as my now popular Phenomenal, produced by crossing the Cuthbert raspberry with our native Pacific Coast blackberry, and the Logan berry, both of which, though a complete blend of two such distinct species, yet reproduce from seed as truly as any wild Rubus species.

I have also had growing on my grounds for some fifteen years or more, hybrids of Rubus idaeus and Rubus villosus, both red and yellow varieties. All are exactly intermediate between these two very widely different species, yet both always come true intermediates from seed, generation after generation, never reverting either way.

By crossing the great African "stubble berry" (Solanum guinense) with our Pacific Coast "rabbit weed" (Solanum villosum) an absolutely new species has also been produced, the fruit of which resembles in almost every particular the common blueberry (Vaccinium Pennsylvanicum), and while the fruit of neither species is edible, the fruit of the newly created one is most delicious and most abundantly produced, and the seedlings, generation after generation, though produced by the million, still all come as true to the new type as do either parent species to their normal type.

Still another example of this mode may be found in my experiments with Opuntias. By crossing O. tuna with O. vulgaris, thousands of seedlings have been produced, all of which, in the first, second and third generations, though a well-balanced blend of the two natural species, still come as true to the newly created species as do either parent species to their own natural types.

Not only does this new mode hold true under cultivation, but species are also

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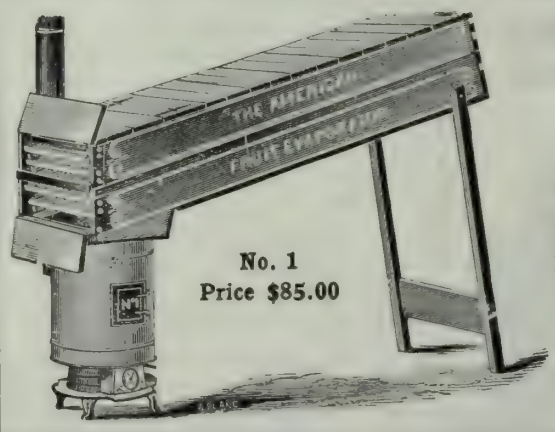

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summarily produced in a wild state by natural crossing.

The western blackcap (Rubus occidentalis) and the eastern red raspberry (Rubus strigosus) when growing contiguous, as they very commonly do in central British America, often cross, forming an intermediate new species which sometimes sorely crowds both of the parent species, and when brought under cultivation still firmly maintains its intermediate characters, no matter how often reproduced from seed. And still further, our common "tarweed" (Madia elegans), with its beautiful large blossoms often crosses with M. saliva with its insignificant pale yellow flowers, producing a complete intermediate. I have not yet determined wnether the intermediate will reproduce true from seed, but confidently expect it to do so. Similar results among wild evergreens and deciduous trees and shrubs and herbaceous plants have been frequently and forcefully brought to my attention, leaving little doubt in my own mind that the evolution of species is by more modes than some are inclined to admit.

The Question of Oil.

[Written for the PACIFIC RURAL PRESS by WM. M. BRISTOL.]

What place is crude petroleum with asphalt base to have in the roadmaking of the future?

It is an interesting fact that although not one person in a thousand in California has seen any of the concrete roadway now being constructed by the State Highway Commission, the sentiment in favor of it is practically unanimous. This does not mean, however, that the use of oil is be abandoned; for the concrete road is too costly to permit of its immediate construction on all thoroughfares. And, furthermore, there is a widely prevalent belief that the exact method of using oil in road construction in order to obtain the best results has not yet been systematically tested.

Where oil has been used for surfacing and binding macadam roads it has been found that such roads inevitably become wavy or rough and the verdict has been that too much oil was used. This verdict, however, is only a half-truth and needs qualification. The qualification is to be found in the oiled macadam roads which, after a few years of service, have been torn up and re-made. These re-made roads have remained smooth, have worn evenly and have not required any subsequent dressings of oil and sand or screenings after the manner proposed for the concrete highway. It is interesting to analyze what happens in the making and re-making of the oiled macadam road.

It seems to be conceded that broken limestone when used for macadamizing forms a more compact and tenacious mass than does the harder stone of granitic character; and this fact has led to the mixing of the two for obvious reasons. As a matter of fact, however, this mixing involves much care and expense and is difficult in practice. In many sections of the State the granitic rocks are abundant, and, if after crushing, they can be firmly bound in the roadway will be found preferable to limestone or an admixture thereof. Where granite alone is used it must be bound together, not only at the surface, but throughout the mass by the addition of something; and, in the opinion of roadbuilders of the day, that something must be either cement or asphalt.

Where asphalt has been used it has been either in the form of a heavy crude petroleum or of liquid asphalt residue from the refinery. The roadbuilders have sought to solidify the layer of crushed granite by rolling it and to bind the surface by a light application of oil or asphalt and a coat of sand or screenings. Usually the layer of crushed stone has remained loose except where an excess of oil has gone down into it—and this has been the rule oftener than the exception. Heavy traffic has finally pushed the unevenly bound stone into dips, spurs and ridges which bring hard words to the mind if not to the lips of the traveler.

To remedy this condition the oiled macadam has been torn up in some places by means of Cyclopean cultivators and the roads have been re-made. After the giant cultivator, drawn by a powerful tractor, has passed by, the macadam is seen to be in the form of cakes, the stones of which are firmly bound together by the asphalt, from which the volatile oil has now been evaporated. A roadroller, with spiked wheels passes over the cakes and, theoretically leaves them disintegrated, each piece of stone retaining a coating of asphalt. Then comes the road grader, drag or whatever implement is found best adapted to smoothing out the crushed rock, after which the roller, with spikes removed, comes back to solidify it. A light dressing of oil and sand follows and the road is again opened to travel, and in better condition than when new; for the condensed asphalt throughout the macadam now acts as a binder rather than as a lubricant, as was the case while it contained volatile oil.

This remaking process, however, is expensive and naturally prompts the question, "Cannot this condition be attained in the original construction process?" It is the belief of many road-students that it can, and the concensus of suggestion seems to be along the following lines:

Let the earthen bed of the roadway be first prepared as if for permanent travel except that enough earth be removed to make room for the coming layer of macadam. Let the road, in that condition be actually opened for travel for a year; for the hoofs of horses and the relatively narrow wheels of heavily loaded wagons will pack its surface more effectively than the wide-wheeled roadroller, especially if a long, wooden smoothing drag be occasionally drawn over it in the early stages of the packing process. The earthen bed having been prepared in this simple and inexpensive, yet effective way, let the broken stone ungraded as to sizes, be spread thereon. Then let the oil-wagon come and give the mass just about the amount of oil commonly used in surfacing, and let the mass be stirred at intervals of a few days by means of an ordinary cultivator in order that each piece of stone may get a film of asphalt while the volatile oil is given opportunity to evaporate. In the course of a few weeks let the macadam be smoothed and rolled and opened to the public.

It is not contended that this would be better than concrete, but it is believed that it would be cheaper, especially where natural gravel of proper size is available for use instead of crushed stone. Indeed there are several short stretches in San Bernardino county where roads of this character have been incidentally constructed across gravel beds; and this road has the appearance of the best asphalt pavement. It is further believed that where the soil is naturally dry and compact and is thoroughly solidified, three or four inches of this kind of macadam would be sufficient, especially for roads upon which there is not much travel.

The construction of a system of State and county highways is but the beginning of road building in California; but the byways must be improved by cheaper methods than the highways and there must be more experimentation before these cheaper methods are perfected.

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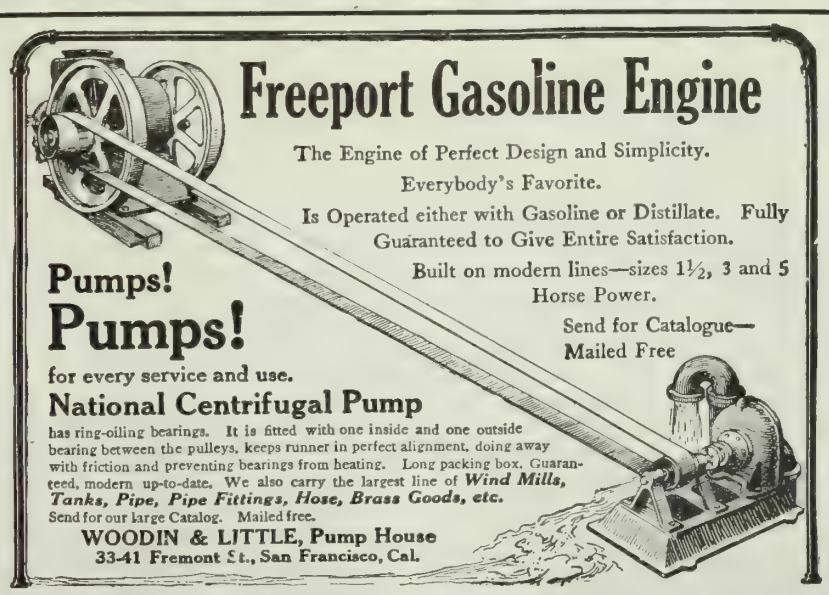

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AGRICULTURAL REVIEW.

The Fourth Gravenstein Show.

Far and away the prettiest fruit show of the many held annually in California was the Gravenstein Apple Show held at Sebastopol last week. Other shows may be larger and more representative of the State, but none are prettier. The Gravenstein—red striped and very strongly flavored—lends itself to display, and those making the exhibits used this advantage to the utmost. At the show held last week there were the usual box displays, the wonderful feature exhibits, as well as the showing of flowers and other fruits.

Perhaps the most beautiful display was that made by the boys of the Analy district high school, which is reproduced on this page. The old Greek Parthenon, reduced to one-eighteenth its size, was erected, consisting of a frame covered with apples and the columns made of wood covered with white cloth, which made a handsome booth and for which the boys were given a $100 prize.

The Parthenon, Reproduced by the Boys of the Analy High School.

There were many striking designs shown, the two best being a mammoth clock sent by Graton district and an immense dirigible balloon from Forestville, each one being decorated with fresh and evaporated apples.

We learn that the attendance was fully up to that of last year and the receipts large enough to pay the expenses. This is rather wonderful when one takes into consideration the fact that Sebastopol is but a small town of perhaps less than 2,500 people. To get together such an exhibit and make it successful means that the people of that section must be hustlers and know how to work together.

As a matter of fact, however, Sebastopol and the Gold Ridge section are located in Sonoma county, one of the most productive in California. This county is enjoying a prosperous season in practically all agricultural lines, and the prices being received are above the average, so why should not Sebastopol conduct a successful apple exhibit?

While at the show we met County Horticultural Commissioner Galloway, who went over the crop situation with us quite fully. Mr. Galloway said that grain, hops and hay were especially good this season. Apples were about 80% of last year's yield, but that prices were fully a half more; berries had been fine and prices better than usual; cherries had been poor; grapes promised a better crop than last season in spite of some sunburn in July, and the prices will be better than for several years. Stock and dairymen have been doing especially well with plenty of feed and good prices. Poultrymen have not done quite as well as usual, owing to low price of eggs and high cost of feed.

With the Fruit Men.

The Northwestern Fruit Exchange has decided to advertise its apples and to market them under the "Skookum" brand—which name is the Chinook Indian word for expressing very good or very excellent quality. More than 150 varieties of apples are grown by members of the Pacific Northwest Exchange, but it has been decided to select eight varieties only to be marketed and advertised under the "Skookum" brand.

Fair Oaks and Orangevale districts, in Sacramento county, are making preparations for a fine display of citrus trees and fruits at the coming State Fair.

Fig packing is now under way in the San Joaquin valley. The crop will be a little lighter than had been expected. About 3½c is being paid for the fruit.

The prune crop of 1913 is now estimated to be less than any year for several seasons past. The production for the world is estimated at 225,000,000 lbs., while the crop in 1912 was 385,000,000 lbs. From the above figures the present price of prunes to the growers would seem to be amply justified.

According to the report of the Department of Agriculture, the apple crop on August 1st was rated at 52.2% of a crop for the whole country, as against 54.5% for a ten-year average.

By competent estimates the orange crop now on the trees is given in the heavy districts as follows: Riverside, 50% of normal; Redlands, 50; Pomona and Ontario, 80. While the crop the coming season will not be as large as other years, yet it is thought that the growers may get as much net for their year's production.

The Florida Packer places the coming orange crop of that State at 7,000,000 boxes.

It was announced last week that the California Wine Association would adhere to its contracts to pay $10 for grapes in the Fresno district, notwithstanding the tariff situation at Washington.

The Santa Rosa Republican tells of fine strawberry clingstone peaches being raised near there on trees that were planted forty-seven years ago.

Five thousand tuberous rooted begonias in their endless variety have been presented to the 1915 International Exposition by Sanders & Sons of St. Albans, England, who enjoy the honor of being special warrant nurserymen to the King of England. These flowers are to be used at the discretion of G. A. Dennison, Chief of the Department of Horticulture. The begonias are to be used in beautifying the surroundings of the Palace of Horticulture. As soon as these flowers arrive they will be turned over to John McLaren, landscape engineer of the Exposition, who will have them planted as specified. The begonia bed will be a part of the wonderful horticultural garden that will fill 3,000 feet of ground between the Horticultural Palace and Festival Hall.

The latest estimates of the 1913 raisin crop of the State place the amount at

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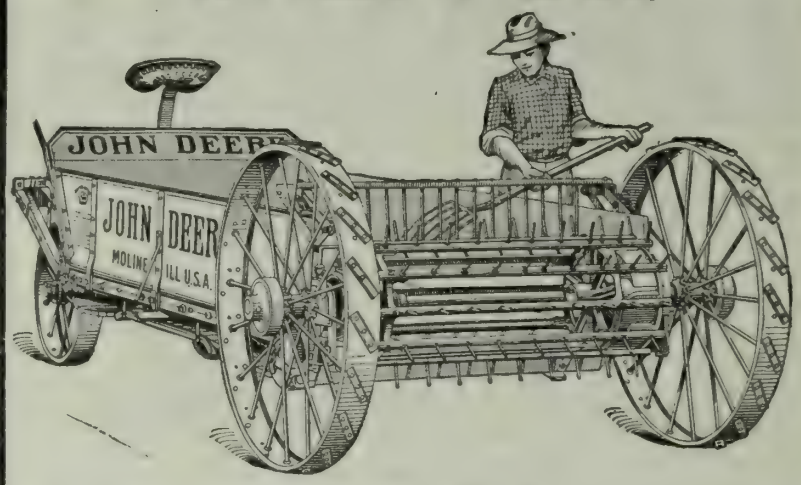

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between 70,000 and 80,000 tons, or fully 40,000 tons less than had been looked for a few months ago.

The Madera County Dried Fruit Association was organized at Madera last week. A number of the leading peach growers of that section are back of the movement.

Bartlett pears from Placer county are bringing good prices in the East. Last week two cars sold for $1,660 and $1,681.

The Chico Cured Fruit Association has leased and will operate this season the Griffin & Skelley packing-house at Chico. The Association expects to handle 500 tons of peaches and prunes this year.

The California Associated Raisin Co. has withdrawn its quotations on seedless Sultana raisins, as it has sold all of this variety that it controlled, which means practically the whole crop of the State.

Paul Popenoe, of Altadena, has been appointed editor of the American Breeders' Magazine, published at Washington, D. C. Mr. Popenoe left here last week for the scene of his future work, and is anxious to have all plant breeders send him their addresses.

The peach crop in the Hemet valley is turning out fine this season, while the apricot crop there was very short.

It was announced last week that the California Fruit Canners' Association had reached an agreement to work with and help handle the raisin crop which is largely controlled by the California Raisin Association.

Dr. Cook, of the State Horticultural Commission, reports finding a sure cure for the black scale on citrus trees. The parasite is found in the West Indies and attacks the half-grown scale.

Agricultural Notes.

According to Inspector H. C. Bunker, of the San Francisco Chamber of Commerce, there is now in storage in warehouses at Stockton and Port Costa about the same amount of barley as at this time last year. The wheat in storage is much less than a year ago, and there are 131,264 sacks of beans in the warehouses of the State, together with 1047 tons of oats, 162 tons of corn, and 183 tons of bran.

The total acreage devoted to alfalfa in the Turlock district is placed at 75,000 acres. Total crop value this year is given at about $4,500,000.

Blackbirds and wild ducks are reported to be visiting the rice fields adjoining the Sacramento river in thousands, and to be damaging the rice crop very much. Growers have stationed parties in the fields with guns to drive the birds away.

Water in the bed of Tulare lake is receding daily, and it is predicted that the lake will entirely disappear before the winter rains set in. Harvesting is still progressing in the grain fields around the edge of the lake.

The Riverside News tells of a new potato that was raised near there this season. It is called the Garnet Chili, a heart-shaped spud of purple color, the seed for which cost $2 per pound.

Farmers in the district around Herndon, Fresno county, have suffered considerable damage from ground squirrels this season. An organized effort is to be made to exterminate them by using the methods of the federal authorities in the use of poison.

At the Hamilton sugar factory 600 tons of beets are being worked up into 2,500 stacks of sugar daily. The sugar content is high and it is expected that a record run will be made.

C. R. Devereux, of Concord, has already stored in warehouse, 75 carloads of hay and expects to double the amount soon, which he will hold for higher prices the coming winter.

The Tulare Co-operative Poultry Association now has a membership of over 80, and during July handled 12,060 dozen of eggs. Prices paid for eggs during that month were 27c for firsts and 28c for selected.

Growers of hops in California as well as Oregon are enjoying a prosperous season. The hop crop is yielding more than expected, and the recent raise in price from 15 to 18 and 20c per pound means greater profits.

Miscellaneous.

The well known Tagus ranch, near Tulare, is being improved into one of the best stock ranches of that section. Three miles of 20-inch concrete water pipe is being laid and the 3,000 acres comprising the ranch are being leveled.

Part of the John Crouch ranch, east of Chico, was sold last week to San Francisco parties. The new holdings comprise 9,128 acres, mostly stock range, and the new owners will go into the cattle and sheep business.

Many new pumping plants for irrigation purposes have been put in around Colusa this season, and more will be installed this fall.

A second irrigation district near Tracy is now under way. The first one, to cover 50,000 acres, was started about a month ago, and the second one is to cover 12,000 acres east of Tracy toward Oakley.

VALUE OF LIME ON HEAVY SOILS.

The Pacific Lime and Plaster Company advise us of the receipt of a letter recently received from Mr. H. B. Loban, manager of the Cotati Ranch, Sonoma County, the soil of which is heavy black adobe:

"I tried a light application on about 35 acres (heavy black adobe) putting on about 800 pounds (agricultural hydrate) to the acre. The crop on this piece of land exceeded two tons per acre (I have not received the exact weights from the baler yet) while on a piece of similar land adjoining the crop was only one ton per acre. The land on which the lime was placed kept loose and moist until July."

The increase in crops is surely very pronounced. The lime used was paid for several times over, and its effect will be good for several years to come.

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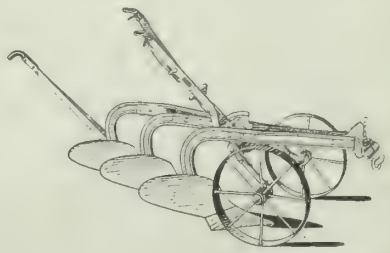

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With the New Exhibitor.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The handling of stock after arriving at the Fair is as important as the fitting for the Fair, and the breeder who exhibits for the first time, usually finds many difficulties to overcome.

As an example of this, an owner exhibited a Jersey bull, at one of the county fairs, for the first time. Early in the evening the attendant took the bull out to water him, using a leather halter to lead him, as he had no ring in his nose. This practice had been followed on the owner's ranch, and as the bull was a young one and easily managed, no trouble was experienced, but when he was led out among a bunch of registered Holstein cows it took about a half dozen men with clubs to get him back into his stall. By having a ring and staff this would have been overcome easily, and so it would seem very foolish to show bulls at a fair without having a good strong ring in the animals' nose.

The dairy cattle exhibitor attending the fair for the first time should look carefully after the detail work, such as knowing where their quarters are located, securing feed and bedding, and should bring with him a good supply of water pails, blankets, rags for washing, curry combs and brushes, and in fact all of the smaller necessities for taking care of the stock in the best possible manner. A small medicine chest will also be found a very valuable thing to have, as it will often prevent the loss of stock.

The care of show stock while on exhibit means a lot of work, and plenty of help should be had to keep the droppings cleaned up at all times, supply fresh bedding whenever necessary and keep the animal perfectly clean by washing.

The feeding and milking should be attended at the same hours they would be if at home, as the noise and confusion is bad enough without adding any irritation in off-feeding or milking.

The one thing a cattle exhibitor should remember is that the appearance of his stock and their quarters are his biggest asset, and that it is penny wise and pound foolish to expect much good from showing unless the stock is carefully groomed.

There are a great many points that an exhibitor has to learn by experience, and a little pointer given by an old exhibitor should be helpful. It is simply to keep the animal's head always facing the judge, providing he is inspecting that individual. This may seem of small importance, but it is a network of these small points that make a successful show, and this breeder told us that he had found this one point often helped a great deal in receiving prizes.

The successful swine exhibitor has perhaps more trouble than any other stockman, or has had at least in the past. This has been caused to a great extent to overfitting, that is, putting on an abnormal amount of fat in order to show a fat stock exhibit as well as a good boned one. For this reason a big cry has been raised among swine breeders from all over the State, and this year promises to be the beginning of the end of this practice, especially as fat barrow classes have been added to the premium list.

In the past, and no doubt many will do it again this year, it has been the custom to put lots of fat on a hog which was to be shown, and that it is a poor one all breeders admit, for it spoils a good many unborn litters and oftentimes kills the hog or spoils it as a breeder.

Several of the largest breeders in the State have taken a decided stand on this subject, and state that the idea of running a fat stock show with breeding stock is radically wrong, both from the breeders' and buyers' standpoint, as highly fitted hogs sold to the farmer are very often unsatisfactory and work a hardship on the purebred industry.

The only objection to Sacramento as the Fair city, by hogmen, is the extreme heat often encountered sometime during the week, and this is especially true with hog exhibitors, as fat stock is hard to keep cool.

The practice of using water too freely is considered a very dangerous one, for, while the drinking troughs should be kept well filled at all times, most breeders do not think of pouring water on an animal when so warm, for fear of killing it.

Practically the same details apply to hog, sheep, and horse exhibitor as to the dairy cattle breeder, and it should be added that the man who shows at the fair must go prepared to be as busy or more so at the fair as he would be at home, also to be congenial with other breeders and to show a friendly spirit toward everybody, for the fair is his greatest opportunity of making both personal and business friends.

VETERINARY REPLIES AND COMMENTS.

[By Dr. E. J. CREELY, California Veterinary College, San Francisco.]

The Value of Twins.

To the Editor: Am in receipt of answer regarding cow, and thank you very much for your trouble. Te cow took a sudden turn fcr worse, however, and died before I received your reply. Her bowels absolutely refused to act, although I gave large doses of salts. After she died I cut her open and found of course that her system was all clogged up. Also found she was to give birth to twin calves (both heifers). Could the twins have had anything to do with her ailment? I am not much experienced with cows, but have never had a mare than made a succes of twins; in fact, only one pair of twin colts has ever come under my observation where mare and colts both lived. I have wondered if twins in cattle have the same effect.—Forest W. Wood, San Luis Obispo.

Uniperous animals can bring forth more than one at a birth and the offspring thrive, although the offspring of uniperous animals may or may not be capable of reproducing themselves. The human being is a good illustration of this, and what applies to human medicines applies likewise to veterinary medicine.

Side-Bone.

To the Editor: I have a 1500 pound three year old, colt with small flat brittle feet that has side bone coming on left front foot caused by driving him barefoot on the road two or three months ago. I have been applying tincture of iodine daily for a month, and thought several times it was yielding, but its doubtful. I would like to know what will take it off?—P. Alling, Lodi.

A good blister of the following once every six weeks for three times will stop the sidebones from growing. Sidebones on a draft horse are not considered an unsoundness; in light fast drivers it is an incurable blemish causing lameness. Sidebones cannot be removed. Use this blister:

Simple cerate, 4-ounces; cantharides, 3 drachms; bin iodide mercury, 2 drachms. Mix thoroughly and apply after clipping hair.

Lumpy Jaw.

To the Editor: I have a few young cows with lumps coming on the under side of the jawbone which I think is lumpy jaw. What is the cause of this, and can you give me a cure?—A. D. Lane, Delevan.

This is lumpy jaw (actinomycosis). Iodide of potash is a specific. Give 2 drachms iodide potash for three weeks, then increase to 4 drachms daily. If the enlargement is growing, cut into it and insert on pledgets of absorbent cotton and tincture of iodine once daily.

Possibly Non-Sterilization of Milking Tube.

To the Editor: I have a cow that calfed last January. She got milk-fever and I called in a veterinary. A few days after, one teat became hard inside and the milk would not come. Again I asked advice from the veterinary. I have used a milking tube ever since and have rubbed with several oils and prepared mixtures given by the veterinary. The teat is still the same. Now I am trying to dry up that teat by using the tube only once in several days, and thought that probably when she come in again it would be well. Is this right? Can you tell me what to do? I think the veterinary injured the inside of the teat when the air was injected, as I saw him use the instrument. —J. C., Bend.

You have probably infected this teat by not properly caring for your milking tube. It is not likely that a qualified veterinarian would cause this trouble. Probably you did not follow your veterinarian's advice regarding sterility after he treated your cow.

Paralysis During Pregnancy.

To the Editor: I have a cow that will freshen in a few days. About 6 days ago she seemed weak in her hind legs and on going downhill would drag or stumble for 10 or 12 feet, then catch herself and go on rather wobbly. She seemed weak across the kidneys. She has been on dry but good feed on 80 acres of hill land and the cow is in good order. Since I noticed her condition I brought her up and put her in a lot and fed her grass, and three times a day fed 7 quarts of bran and a quart of barley and she seems a little better. Owing to her condition of coming-in soon I did not think I would give her salts. This will be her fourth calf. She is a fine milk cow and has always had good care. Can you advise me what to do?—C. L. D., Groveland.

Pregnant animals about to bring forth their young sometimes show a paralysis or loss of power in their hind parts due to pressure of foetus. Nature corrects this after birth.

For a Cleft Hoof.

To the Editor: I have a horse with a cracked of "cleft" hoof. Will you kindly let me know, through the RURAL PRESS, what to do for this? I have not had the horse long. One hind foot has been in a bad condition, the other seems to be beginning to crack. Can anything be done by feeding or otherwise to toughen the hoofs and render them less liable to crack? I am using neatsfoot oil, which seems to help as an outward application.—E. M. Calkins, Hemet.

Apply the following: Honey, 2 ounces; yellow wax, 4 ounces; tar, 2 ounces; olive oil 8 ounces. Melt, mix and apply once daily.

Treatment for Horse's Feet.

To the Editor: The soles of the fore feet of a fine four-year-old horse, weight 1350, are rather spongy and grow down faster than the hoof, sometimes causing slight lameness. He is not on soft pasture, but is stabled all the time. Now have bar shoes on him. What treatment do you recommend?—Rancher, Grass Valley.

Use leather, tar and okum and a dish-shoe.

Lumps in Teats.

To the Editor: My cow has hard lumps in her teats and lower part of the bag. These cause pain to her on milking, but there are no other symptoms of disorder. This condition has prevailed several months. Can you give a remedy?—A. D. Butler, Napa.

Give 1 drachm iodide potash daily for one week; 2 drachms the second week; 3 drachms the third week, and reduce as you began. If tumors are small and interfere with the flow of milk they can be removed.

OFFICIAL TESTING IN TULARE.

In a letter from R. F. Guerin, proprietor of the Sunnyside herd of Holsteins, at Visalia, he writes that he has just finished some official testing which proved very satisfactory.

In view of the fact that alfalfa was the principal feed, only a little grain being fed night and morning, the following records seem to be very good and show the quality of the Holsteins kept on this farm, the figures being for a test of seven days:

Zampa Maud Muller, 413.1 pounds milk, 22.560 pounds fat; Buttonhole Bess 2nd, 245.2 pounds milk, 11.780 pounds fat; Precious Promise, 457.7 pounds milk, 18.103 pounds fat; Iola Dawn Queen, 385.3 lbs. milk, 10.430 lbs. fat; Lady Dorothy Hengerveld, 300 pounds milk, 11.483 pounds fat; Viola Virginia (2 years old), 253.9 pounds milk, 12.787 pounrs fat; Princess Fayette 3rd, 433.3 pounds milk, 15.815 pounds fat; Nordica Queen, 384 pounds milk, 19.067 pounds fat; Calvia Wea Julip, 437 pounds milk, 16.228 pounds fat.

Hog Raising on a Fruit Ranch.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

So many good things have been said and written about the hog as a money maker that it would seem that farmers must surely know by this time all of the advantages of this animal.

A peculiar feature of this State's hog industry is that seldom is it entered into as the chief source of revenue, but rather as a by-product. It is perhaps due to this reason that our annual pork production is only a fraction of the consumption and that we ship in pork products when we should be able to at least supply our home market. The hog is the one farm animal in this State today that is raised more or less extensively as a by-product by every class of farmer, whether he be grain grower, alfalfa grower or fruit grower, and the only faults one can find are that the present day hog is not well enough bred or large enough in numbers.

One of the first fruit firms in the State to see the benefits of hogs was the California Nursery Company at Niles, and they not only saw the advantage of having something to consume the waste products from their nursery and orchards, but also deemed it advisable to secure the hog which would transform this waste fruit into the most pork.

The plan which they use supplies them with ample feed for the entire year, a condition that most fruit men who have hogs find hard to overcome.

Having some 600 acres planted partly to orchard, but mostly to nursery stock, there are, during the summer and fall months, a great many wind-falls and culls which would ordinarily go to waste. These include such fruits as apricots, peaches, pears and apples, besides other varieties in smaller amounts, which are usually to be found at a nursery. The culls are sorted out when shipping is being done and hauled in a wagon to the hog lot, where they are fed green without any preparation. As often as necessary to keep the wind-falls from rotting on the ground they are hauled in and fed in the same manner.

As the fruit season with such a diversified orchard lasts for several months, no other feed is necessary during the late spring, summer and fall months. As the soil upon which the nursery stock is grown has to be changed from a tree crop or else lay idle, small catch-crops such as sweet corn, pumpkins, mangel wurtzels, cabbage, and the like, are planted. These crops, like the fruit crop, only furnish hog feed as a by-product, for only the culls are used for that purpose, the balance being used for consumption on the ranch and for shipment to the market.

By carrying on such a plan, only the wastes of the ranch are given to the hogs, and by having purebred stock this waste product adds a good deal to the net returns from the ranch, for the young stock is all sold at good figures, for breeders, as fast as they can be raised, and with this close selling there are usually from 55 to 65 head on the ranch. Twelve brood sows are being kept in the herd at present, the herd sire being Oaks Longfellow 9159969. This is a good looking individual and is being crossed with Masterpiece blood, the former herd boar being Oxford of Masterpiece. One particularly good sow noticed among the herd was Countess of Niles 3rd 168474, sired by Oxford Masterpiece and out of the dam Countess of Niles 2nd 168474.

Although this company carries on its operations in a large way, most any fruit man can raise hogs as a by-product by using cull fruit and by planting catch-crops such as we have mentioned, but instead of planting them for rotation they could be raised between the rows in the orchard.

The hog as a by-product is not only a profitable animal for the orchardist, dairyman and grain man, but is used by almost every class of farmers, and has in the past been used as a market for such crops as melons, grapes, etc.

As before stated, the hog industry of the State is a long way short of its possible supply, and until farmers of all kinds see the advantages of better stock and more of it, they will be annually losing large amounts which should go into their pockets instead of being sent to other States for lard, bacon, hams, etc.

SUCCESSFUL FAIR AT WOODLAND.

[Written for the PACIFIC RURAL PRESS.]

"The biggest little fair held in California this year," is the way the press agents worked up the Yolo county fair held at Woodland last week, and they evidently did their work well, judging by the number and quality of exhibits as well as the large daily attendance. Speaking of quality, this "big little fair" was very fortunate in having some of the very best live stock breeders in the West located near enough for them to help out with their purebred stock.

Among the more prominent of these was the Oak Grove Dairy Farm's exhibit of Berkshires, which included such fine individuals as Ravenwood Longfellow, Oak's Combination Longfellow, and others of equally good breeding. A. H. Brinton also showed some fine Berkshire gilts.

A. W. Morris & Son had a string of 14 head of their big producing Holsteins exhibited, including Riverside Sadie De Kol and Valley Mead 2nd. As usual, this exhibit attracted a great deal of attention and greatly aided in the live stock show.

It was expected that the State Farm would send over a part of their Holstein herd, but as their show stock was being fitted for the State Fair, no Holsteins were taken. However, they had a good showing of Hereford and Aberdeen cattle, Shire and Percheron horses.

By not having competition, Morris & Son took the Holstein honors, and the State Farm all of the beef cattle awards without trouble.

A. H. Brinton showed several head of female Jerseys and his herd bull, which about made up the Jersey classes, with no competition except from W. Fisk from Davis, who showed his senior yearling bull.

A nice showing of Percheron, Belgian, Shire, and Clydesdale horses was shown by Ruby & Bowers, from Davis, other exhibitors being Putah Breeders Association, C. E. Ruggles, and H. C. Hinckley.

Kampke Bros. had a nice string of Hampshire sheep, which attracted a good deal of attention and showed that these young men have a good understanding of sheep breeding.

As can be seen from the above, the live stock exhibits were of high quality, but the horticultural exhibit also came in for a great deal of credit to County Horticultural Commissioner Hecke and others, who had a fine display of fruits, vegetables, grains and grasses in the agricultural tent.

The implement tent was well filled with vehicles, plows, etc., a good deal of interest being taken in the Hinman milker, which was on display by C. A. Daniels.

The horse show brought out a good many contenders and was superior in quality to the shows usually seen at county fairs.

Being held in the center of a district where harness racing has always been popular, the races attracted a great deal of attention and brought out some exciting heats.

The attendance was all that could be expected at a county fair, it being estimated that between 3000 and 4000 visitors attended each day.

As this was the first fair held at Woodland for a great many years, it indicates that the old-fashioned county fair is to be revived and that they will be bigger and better than ever before.—J. C. L.

MALLEIN TEST EXPENSIVE.

While the Mallein test for horses may have good features, it oftentimes works a hardship on the importer, not only in time but in money as well. While talking with C. W. Bowers, of the firm of Ruby & Bowers, we were told that this test during the past two years had cost that firm over $4,000. The great trouble with it, so far as California importers are concerned, is the fact that when the shipment arrives at the Atlantic ports the stock is in no condition to stand the test, so it is shipped to a Canadian port, immediately loaded onto the cars, and shipped west through Canada and takes the test before entering the United States. This extra traveling costs a good deal of money—about $350 on a carload of horses—and also greatly delays the stock en route.

It would seem that a more advisable thing to do would be to either allow the stock to be tested by the State Veterinarian after arrival or provide a quarantine station at San Francisco.

In many ways California's progress along livestock lines is seemingly overlooked by the lawmakers, and about the best way to get good laws is for the stockmen to demand through organizations their wants.

FIRST CONCRETE BLOCK SILOS.

The first concrete block silos to be erected in this State are now completed, at the Glide ranches in Solano and Yolo counties.

These silos are about the neatest and handiest in construction of any of the new ones we have seen this year, and were built by the Delta Construction Company of Sacramento.

In making these silos, the blocks for same are made on the ranch. The blocks are made solid with a slight curve on the face and back and have a large groove on each end, also a small groove on the top and bottom. These grooves furnish space for reinforcing, and in this respect these silos are well braced, as a rod is run around the top of each course of blocks, and also up and down at the ends of each block. Mortar is used to set the blocks with and also to fill up the grooves after the iron rods are in place.

The face of the blocks is made to imitate stone with a rough finish, and after being finished with a cement solution, has a very attractive appearance. The side of the blocks used for the inside is smooth, and, after being layed, an asphaltum paint is used which makes them absolutely air and water tight.

A continuous door system is used by having panels about two feet long with a patented latch which is used to make them air-tight.

The silos hold over 200 tons of ensilage and also furnish the foundation for a large cement block water tank, which is in reality a continuation of the side walls with a floor put across for the bottom of the tank. A tank of this kind at a height of nearly 40 feet has many good features, but the main one is in having a fine water pressure.

At the time of our visit, Mr. J. H. Glide was just preparing to fill his silo with alfalfa which will be used to feed his sheep, and if it proves satisfactory more will be erected next year.

As stated in this journal in past issues, this is the first feeding experiment of the kind to be carried out by any cattle breeder in this State, and the results will have a big bearing on the future of the silo among beef and sheep men.

STATE DAIRY INDUSTRY AT LARGE.

While anyone can easily see that the dairy industry is growing very fast, the figures which have been compiled in the office of State Veterinarian Keane are very interesting, inasmuch as they show the actual production during the year which ended June 30, 1913, and also give the amount of increase in dairy cattle. The report states that the industry represents an investment of nearly $40,000,000 and that the total receipts from milk, butter and other dairy products were $35,000,000 for the year.

There are at present 700,000 dairy cattle in the State, which is an increase of 200,000 in the past two years and 350,000 in the past seven years. This large increase may be directly traced to the large amounts of arid lands being brought under irrigation and seeded to alfalfa.

The market standpoint of the industry has been very satisfactory, as prices were good, and although six years ago California was importing butter, she has now increased production to such an extent that the export trade is fast being built up. It is gratifying to know that even though the increase in cattle was considered almost abnormal, last year butter-fat prices were good all year.

Dr. Keane emphasizes the need for dairymen to take steps for the eradication of tuberculosis, and suggests that they have their herds tested and to slaughter the reactors.

Increased Grazing in California Forests.

There has been a gradual increase in the demand for range within the National Forests of California, as indicated by the reports covering the fiscal year 1913, which have just been sent to the Forester in Washington. Statistics prepared by the U. S. Department of Agriculture, however, show a falling off in the number of livestock in the State of California amounting to 56,000 head of cattle and 53,000 head of sheep as compared to the same date of the preceding year.

The most striking change in grazing conditions in the National Forests has been in the increased number of persons holding permits to graze stock within the forests. There are 153 new permittees, which increases the total for the State from 2,888 to 3,041. The total number of cattle and horses provided with range was 181,716 head, a raise of 1,852 head above the 179,764 head for which permits were issued the previous year. The number of sheep and goats also increased from 444,648 head to 449,105 head, a gain of 4,457. There was, however, a slump in swine, which dropped from 3,480 to 2,360 head.

The average number of cattle and horses per permit in the State of California is 68 head, while the average number of sheep and goats is 1,191 head. These averages are a trifle less than the general average for all the national forests of the United States.

While the number of stock grazed upon the national forests of California continues to increase, there is as a matter of fact an actual decrease in the acreage of forest land available for the use of stockgrowers. This decrease is due to several causes, such as the actual eliminations from the forests of large areas, the demands of settlers for agricultural land under the homestead act of June 11, 1906; the demands of tourists for small areas upon which they may pasture their saddle and pack stock while visiting the almost countless points of scenic interest in the State; and the rapid extension of tree growth over areas which in the past furnished a large proportion of the forage consumed by the stock.

During the past year, for instance, the Forest Service recommended the elimination outright of some 100,000 acres of land, and the national forest area was restricted by that amount. It also recommended that 564 tracts of land, with an aggregate acreage of 59,367 acres, be listed and opened to agricultural settlement. While in some cases the applicants have not filed upon or occupied the land, a great many of the claims have been settled upon and are rapidly being brought under cultivation, thus curtailing the amount of land available for the pasturage of permitted stock.

During the year thousands of tourists seek health and recreation in the national forests of California, and in order to supply suitable forage for the saddle and pack-animals of the tourists it has been necessary to exclude cattle and sheep from many choice meadows and bits of grass land. In the majority of cases the stockgrowers have voluntarily consented to these reductions in their grazing allotments, and in some cases have contributed to the cost of fences or have otherwise protected the areas set aside for tourists' use, in spite of the fact that the segregation of these tracts has materially reduced the available supply of forage.

In the eyes of the stockgrower the factor which most seriously threatens the future of his business is the rapid extension of trees and brush cover over the lands which previously were principal sources of forage supply. Prior to the creation of the national forests repeated fires and the overgrazing of the lands prevented any natural re-establishment of the forest cover, but under the systems of fire protection and range management adopted by the Service, the burned-over lands are reforesting wherever natural conditions are favorable.

However, according to the officers, the curtailment in available range area which has been brought about by the conditions mentioned is more than offset by an increase in forage productivity on the lands remaining open to the grazing of live stock, and it is quite apparent that the improvement in range conditions which is being effected by the Forest Service will keep pace with the demands of the industry, so that it will be entirely possible to provide summer range upon the national forests for all of the stock which can be wintered within the locality adjacent to and naturally dependent upon the forest ranges.

SHEEP TICKS AND SPOTTED FEVER.

The free grazing of 2,500 head of sheep upon the Bitterroot National Forest, in the State of Montana, has been authorized by the Secretary of Agriculture as part of a novel experiment in trapping the deadly spotted fever tick. The Forest Service and the Public Health Service are working together in co-operation with local sheep growers in this new campaign.

It is the general belief of the leading medical authorities that the mysterious and frequently fatal disease commonly known as spotted fever is spread by the tick (Dermacentor andersoni) which, in parts of the Bitterroot forest, occurs in such abundance that it constitutes a real menace to man and beast. Surgeon McClintic of the Public Health Service died last year of spotted fever contracted during his study of the disease and its control.

The plan proposed contemplates the grazing of two bands of sheep upon the parts of the forest where the tick is most abundant, with the idea that large numbers of the ticks will attach themselves to the sheep. Then, as occasion requires, the sheep will be freed of the ticks by being dipped in an insecticide solution which will kill the ticks without in any way injuring the sheep.

The engorging of the female tick with blood is one of the essential functions of reproduction, and this gorging must of necessity take place upon the larger mammals which serve as hosts to the tick. The United State Biological Survey has reached the conclusion that the great bulk of the fever ticks which become filled with blood get their supply while attached to domestic stock, and that if the domestic animals are freed of ticks by dipping, by spraying, or by some other effective method of treatment, the chances of the infection of human beings will be vastly reduced. Of the different domestic animals the sheep is the most readily handled and the easiest to dip or treat, hence the selection of sheep for use in the experiment.

BERKSHIRES IN SONOMA COUNTY.

What promises to be one of the most up-to-date Berkshire hog breeding establishments in Sonoma county is that of E. C. Rand, near Santa Rosa. Mr. Rand has 175 acres of land about one-half being hill pasture and the balance is planted to orchard, grain hay, and corn. In the future some alfalfa will be grown. There are about 50 head in the herd, most of which were sired by the present herd boar, Braebourne Burlington. This is a three-year-old boar, sired by Burlington and out of Miss Plattsburg 33rd. He was raised by Sam Wright, of Santa Rosa, and

A. C. RUBY, Portland, Ore. C. W. BOWERS, Sacramento.

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THE LARGEST HORSE IMPORTERS ON THE PACIFIC COAST

We sell more imported horses than all other firms on the Coast because we are direct importers and give a four-year guarantee which is good right at home. We have on hand at all times the largest and best lot of heavy draft stallions and mares, both American bred and imported, to be found any place in the West. If you are in the market for a high-class stallion or mare, don't fail to give us a call, as we can sell you more genuine horse for the money than any other importer in the business.

We have a large shipment of Percherons, Shires, Clydesdales, Belgians, and Hackneys now en route from Europe which will arrive at our establishment about September 10. This is an exceptionally fine lot of horses, and it will pay you to see them before purchasing elsewhere.

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Sires by such bulls as King's Valet, who is conceded to be the best show bull and sire on the Pacific Coast. All of these young bulls have been bred and raised on our farm and carry the reliable Locke guarantee. Prices are reasonable and stock of the best breeding. Do not buy a bull until you have received prices and pedigrees of this stock, or, better, pay our ranch a visit. We exhibit every year at the State Fair for the benefit of our buyers, so be sure to visit our quarters during Fair week and to ship home a sire rich in the blood of our famous herd. Correspondence solicited.

Herd Bull, King's Valet, Gold Medal Senior Champion Bull at State Fair last year.

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INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

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N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

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WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

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HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

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PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

runs back into Gentry's breeding.

As the ranch was badly run down when the present owner purchased it, new buildings had to be put up, including residence, barns and hog houses. That the job has been well done one can see from the changed appearance of the ranch. One building we were especially impressed with was built for a combination house, to be used for hired help sleeping quarters, an up-to-date workshop, a separator room and a feed-grinding room, where a small gasoline engine and feed grinder is operated. This feed grinder is something every farmer should have who feeds grain to stock, for it prepares the food in such a way that there is very little loss. The cost of operating these cutters is very small, as well as the first cost, which was for this one $50.

In connection with purebred hogs, purebred Collies are bred, and make a very profitable as well as enjoyable side line.

We were told that part of this stock will be exhibited at both the Santa Rosa and Sacramento fairs and that from now on the herd will be built up as rapidly as possible.—J. C. L.

WHAT CREAMERY IS DOING IT?

To the Editor: Do you know of a creamery in this State that will furnish a dairy stock to the dairyman, the same to be paid for out of the butter-fat sold to the creamery? If so, please give their address and any other information you may have on this subject.—Reader, San Luis Obispo.

We do not have in mind any creamery which furnishes dairy stock, but were under the impression that all creameries, in new districts at least, furnish money to the dairyman at reasonable rates of interest with which the dairyman may purchase cows. Payments are made by the month and are usually one-half of the cream check.

Just what creameries are at present loaning money in such a manner we cannot say, but do know personally that the Stanislaus creamery, at Modesto, and the Kennau creamery, at Kennau, have large loans out, made in this way.

We believe that by corresponding with either of these companies you will receive any more detailed information you may care for, and we would also appreciate any further suggestions from creamery managers.

A STRIPED HORSE.

Experts of the Bureau of Animal Industry believe they have discovered a new cross-breed of horse that will prove as tough and utilitarian as the mule and yet have the intelligence and speed of the full-blooded horse.

This decision has been reached after experiments made by breeding "Dan," the Greavy zebra from the National Zoological Garden, to a Morgan mare at the Maryland experimental farm of the Department of Agriculture.

The resultant foal has been highly praised by horsemen, and the breeders are urging that the Government import as many more zebras of the same strain as can be procured for the purpose of establishing the new breed.

SHEEP.

FOR SALE—85 highly graded young Shropshire ewes; two thoroughbred rams. Perkins & Co., Perkins, Cal.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

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MISCELLANEOUS.

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Alfalfa and Dried Beet Pulp

The ideal ration for dairy cows.

Dairy experts will tell you that while alfalfa is a wonderful feed and rich in protein, it is deficient in carbohydrates and should never be fed alone if best results in milk production are desired.

H. E. Van Norman of the University of California, Agricultural Experiment Station, says that a cow "cannot eat enough alfalfa hay to enable her to do her best work and she should be fed some form of grain or by-product, low in protein, to supplement the alfalfa eaten."

In Dried Beet Pulp is found the ideal combination with alfalfa to make a perfectly balanced ration. It is light, bulky, succulent, wonderfully rich in carbohydrates and easily digested; absorbs water very quickly and swells to about six times its original bulk. Cattle eat it ravenously as it is very palatable either dry or moistened. It is cheaper than bran or rolled barley and produces better results. It is packed in 100-lb. sacks and can be had from most feed dealers.

DRIED BEET PULP

Always uniform, clean and pure. Keeps indefinitely. Costs less than other rations.

Get a sack or two of Dried Beet Pulp from your dealer today and try feeding it to one cow whose milk record you know. The results will be almost immediate and show A GAIN OF 1 TO 5 LBS. MORE MILK PER DAY.

We have also for those who desire it—

MOLASSES-DRIED BEET PULP

—just the plain beet pulp and beet molasses dried. Preferred by many feeders because of its sweetness, as cattle eat it with so much relish. Has all the feeding value of the plain, but with the addition of molasses. An excellent feed not only for dairy cattle, but for fattening as well. Particularly good for horses; it improves their general condition and also coat. Let the horse try it and he'll show you how he likes it and the way he behaves under it. Molasses-Dried Beet Pulp is put up in the same way as the plain and sold on the same basis. ASK YOUR DEALER FOR IT—OR WRITE US FOR FURTHER INFORMATION.

THE LARROWE MILLING COMPANY

607 Central Building, Los Angeles, Cal.

OREGON WOOL CLIP.

The closing of the 1913 wool season in Oregon brings to light the fact that the clip was the smallest the State has produced in several years. This and lower prices resulted in the sheep of Oregon realizing less money from the industry than usual. But for the good prices obtained in the mutton market, the year's operations would have made a poor showing.

The total clip of the State in 1913 is estimated at about 16,300,000 pounds, as against a production last year of 18,700,000 pounds and a clip two years ago of 18,900,000 pounds. The net value of this season's wool to the Oregon growers was about $2,080,000; that of last year $3,000,000; that two years ago, $2,500,000.

NATIONAL FOREST TIMBER FILLING HOME DEMAND IN CALIFORNIA.

Records recently compiled in the office of the District Forester show that during the fiscal year ending June 30, 1913, there was cut from the 19 National Forests in California 61,572,000 board feet of timber valued at $126,719.89.

Of the above amount, 9,153,000 board feet, valued at $18,011.15, was cut by settlers and residents within or near the forests under free permit for domestic use.

These figures show an increase of about 17 per cent over the total amount cut during the preceding fiscal year, 1912.

With the Livestock Men.

J. H. Glide of Dixon reports having shipped a carload of Shropshire sheep to British Columbia during the week. It is hoped that this will be a new market for the California breeder, as the transportation difficulties have now been overcome, a new railroad having been recently completed which will allow of through shipments. Mr. Glide reports that the demands for Shropshire sheep this year has been very heavy and that most breeders are well cleaned up on this breed.

The Polytechnic School of San Luis Bbispo expects to show its pure-bred horses and cattle at the coming county fair at Fresno. This will be the first time for this stock to be shown at Fresno and will greatly benefit the live stock exhibit there.

A foundation Jersey herd was purchased during the week by Mr. Crabtree of Stratford, Kings county, from the Royal Jersey herd at Hanford. Heretofore the Jersey breed in Kings county has been slow to advance, and it is good to know that more purebreds are being added.

A dairyman by the name of J. B. Moore of South Colusa has been complained against by James Smith, State Dairy Inspector, for not having complied with the State dairy laws as to sanitary conditions.

J. M. Clark of Woodland has started a good sized purebred herd of O. I. C. swine on his ranch near town. The foundation for the herd was purchased in Oregon, and it is Mr. Clark's intention to build up a good sized herd of the white hogs.

A drift fence nearly seven miles long is being built by cattlemen of Kern and Inyo counties. The object of the fence is to decrease the cost of herding the cattle near the Kern National Forest. The Forest Service is furnishing the posts and the cattlemen the wire.

The Holstein Friesian Association reports that certificates to the number of 2710 were issued from the secretary's office during the two weeks ended August 2. Of these, 625 were for registrations of cows; 456 were for registrations of bulls; 992 were for transfers of cows, and 637 for transfers of bulls.

Five carloads of feeders, mostly from the 7-V outfit in the Tipton district, were purchased by J. E. Mitchell during the week and shipped to Williams.

Another new Jersey herd is promised Yolo county by W. Fisk of Davis. Mr. Fisk has recently purchased the 19 months old bull, Silver Marquis 107001, from the Wieland herd at Los Angeles, which he expects to use as his herd bull. This bull is a grandson of the imported Golden Marquis, who was grand champion bull at the California State Fair in 1909. His dam is now on official test and is expected to make 1000 pounds of butter for this year. It is the intention of the owner to make a trip East this fall to purchase a carload of purebred Jersey cows to use for a foundation. At present Mr. Fisk is milking 70 head of grade Jerseys and says that they have proved so satisfactory that he considers purchases of purbreds at present prices good business.

Cattlemen from Kern and San Luis Obispo counties report large losses from cattle rustlers, who have, it is said, been operating in a large way in those two counties.

Owing to a good deal of lumpy jaw around Petaluma, an operation was performed on a number of animals last week to try and overcome this growing disease.

Stockmen who depend upon sugar beet tops from the fields near Woodland will have less feed this year than usual, as the beet crop in that district will be considerably short, due, it is claimed, to the exceptionally dry winter.

C. A. Daniels & Son, of Modesto, coast agents for the Hinman milking machine, report that sales have been very good from all over the State. During the past month the Poppy Ridge Dairy at Elk Grove installed the machines and expects to materially cut down the expense of milking and also to keep down the bacterial count, which is said to be the lowest of any dairy in the State. The Hinman Company report having sold 1300 machines since the first of January 1913.

The Jenkins ranch, near Live Oaks, sold during the past week a small herd of milch goats to A. Chapman. The new owner proposes to use these for a foundation herd, which he believes will equal in net returns a cow dairy.

Since last June nearly 500 head of sheep have died near Santa Rosa in the Freestone district. The disease is unknown, and State Veterinarian Keane, assisted by J. J. Summerfield, are investigating to try and diagnose the trouble.

The Tulare county creameries paid, during the month of July, over $91,600, or an increase of about $12,000 over the amount paid during June. This is due a great deal to the extra prices of from one to two cents a pound which were paid, but the production was also increased.

The dairy industry is going ahead very fast around Glenn in Glenn county. Among those who are preparing for good sized dairies in that section are Sam Givens, N. W. Hanson and George M. Hanson.

George B. Reeves, the purebred Jersey breeder of Mountain View, sold, during the week, five head of fine Jerseys to Walter Hobart, the San Mateo millionaire stock fancier. Mr. Hobart expects to use this stock for foundation purposes and says he considers California's Jersey breeders have stock which compares favorably with any in this country.

The feed situation in the Middle West and Southwest is reported as being very bad, and as a consequence all of the Eastern live stock markets are being overrun with half-fat cattle. With corn prices soaring, due to the dry weather, it is expected that the coming winter will see higher beef prices than ever before. California stockmen have, as a rule, been able to realize good prices, but the question of restocking will be a serious one in the future, and the man who starts breeding well-bred beef cattle now will benefit greatly by it in the future.

The Nevada State Fair at Reno, Nevada, which follows the California State Fair this year, is expected to bring out the finest display of live stock ever shown in that State. Prof. True, now with the State Farm at Davis, states that the premium list, which he helped to make up before leaving the University of Nevada, is equally as good as the California State Fair premiums and that a good many California breeders have enquired about making the trip. There is undoubtedly a good market in the State of Nevada for all kinds of live stock and it will pay the California breeder to get in line for this trade, which should naturally come to this State. This business is not confined to any one line, as there is a good demand for beef cattle, sheep, hogs and dairy cattle from the different stock sections.

A movement is on foot among the butchers of Sacramento to regulate prices in such a manner that the consumer would pay the same price for meats in every shop in the city.

C. W. Bowers, of the firm of Ruby & Bowers, reports that they are entirely sold out of stallions, but are expecting a good sized shipment about September 10. He further states that he has found the demand very good, considering the kind of year California farmers have had, and says that the Rural Press was his best selling agent.

The second shipment of Australian meat has been received at Fresno and was sold in the different shops there last week. Reports say that a good many butchers are complaining about the way it is butchered and the way they have to handle it for the retail trade.

The farmers in the Fairmead section of Madera county are receiving 35 cents per pound net for their butter-fat from the Sierra creamery. So far as can be learned, this is the highest price being paid by any creamery in the State to its patrons.

Will Exhibit at State Fair

"HILLCREST LAD"
First Prize Ram at State Fair, 1911

We invite you to inspect our exhibit of prize-winning stock at the State Fair, which will consist of **SHORTHORN CATTLE, SHROPSHIRE** and **MERINO SHEEP** and newly imported **DORSET SHEEP.**
Stock for sale at all times.

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REGISTERED DUROC JERSEYS
CHAMPION HERD AT STANISLAUS COUNTY FAIR, 1912
THREE FIRST PRIZES AT STATE FAIR, 1912
Herd Boar, Modesto King, out of Colorado King and Helen Blazes V.
Show stock and fine young stock for sale.
JNO. P. DAGGS, Modesto, Cal.
(See me at the State Fair.)

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EL DORADO COCOANUT OIL CAKE
for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address
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O. I. C. SWINE
The Big White Hog
Have a few nice young boars left of February and March litters. Sold out everything else. Am taking orders now for weaned pigs to farrow in August, September and October. These will be from large, aged and tested sows, bred to big, heavy-boned boars. Write your wants. Will have a small showing at the State Fair this year. Call around and see what they are.
C. B. CUNNINGHAM, Mills, Cal.
My hogs are recorded in the National O. I. C. Chester White Record Ass'n.

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Has Imitators But No Competitors.
A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address
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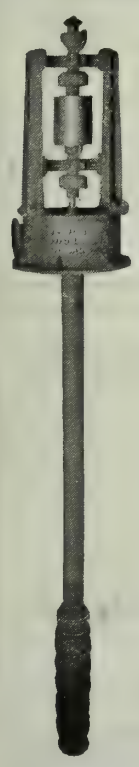
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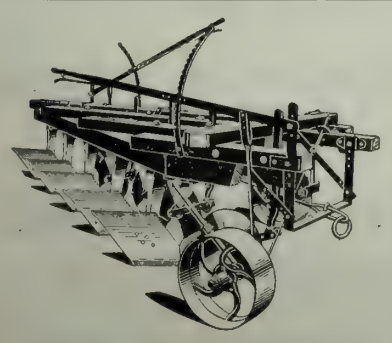
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THE H. C. SHAW COMPANY
Stockton, Cal.

The Shortage of Beef.

A tremendous decrease in cattle while the population of the United States is increasing by leaps and bounds, threatens a beef famine in this country, according to figures secured in Washington August 16th.

The Department of Agriculture finds that the number of cattle in the United States decreased more than 16,000,000 from 1907 to 1913, a period of six years. The population increased from 75,994,575 to 91,972,266 or 15,977,691 from 1900 to 1910.

The threatened famine, coupled with the drough prevailing in the west and southwest, are likely in the near future to make the beef prices soar to heights never reached before.

Official Statistics.—Here are the official statistics for thirteen years on the number of beef cattle in the United States:

Year	No. Cattle
1901	67,804,022
1902	61,424,599
1903	61,764,433
1904	61,049,315
1905	61,241,907
1906	66,861,322
1907	72,533,996
1908	71,267,000
1909	71,099,000
1910	61,081,000
1911	61,225,800
1912	57,957,000
1913	56,527,000

The government is working on two plans to check the shortage of beef but thus far is unable to tell whether it will succeed.

Dr. A. R. Melvin, chief of the Bureau of Animal Industry, is in South America, with assistants attempting to have regulations adopted that will permit of the admission from there of beef in full compliance with the United States inspection laws. Even if South American beef is admitted duty free, however, it will take a long time to fix regulations that will allow that meat to pass inspection.

A Conflicting Report.—Sharp increases in the prices of fresh beef are expected to follow the drought that is scorching the cattle growing states of Kansas, Iowa, Nebraska and Oklahoma and officials of the Department of Agriculture are not concealing their anxiety over the outlook. Their apprehension is increased by unfavorable reports said to have been received from agents now in South America concerning the condition of the cattle there.

In anticipation of the increased meat imports that would follow the passage of the new tariff measure, Dr. A. B. Melvin was sent by the department to South America to observe the manner in which cattle was slaughtered and meat packed in those countries. He is said to have reported that a serious hoof and mouth epidemic is raging in Argentina, the principal meat growing country of South America, and this necessarily would bar the entrance of such meat to the United States.

Australia, in the event of serious shortage, is expected to furnish much of the meat consumed by Americans in the immediate future. This supply may be limited, however, because of Great Britain's demands if Argentina fails her market.

SENATOR FLETCHER'S BANKS FOR FARMERS.

A national rural banking system is proposed in a bill introduced in the United States Senate by Senator Fletcher, chairman of the American Commission on Rural Credits and also of the Federal Commission on Rural Credits appointed by the President.

The bill proposes a system of local national rural banks owned and operated by farmers. A state national rural bank in each state to be owned and controlled by the local banks as stockholders and the National Rural Bank of the United States, to be located in Washington, to be owned entirely by the state rural banks.

To supervise the proposed chain of banks there would be created in the Treasury Department a devision of rural banking, under the direction of a "rural banking board," to consist of the Secretaries of the Treasury, Agriculture and Labor. The division would be under the immediate direction of a "director of rural banking," chosen by the President.

The main purpose of the banks would be to furnish funds to farmers on long-term farm bonds or notes, secured by liens on farms at not exceeding 60 per cent of their assessed value. Loans would be secured first by a local bank, then by a state bank, and last, by the National Rural Bank of the United States, and they would run from twenty to fifty years. The National Rural Bank is designed to have a capital and surplus exceeding $100,000,000, while the stock of each local bank would be limited to $2,000,000.

Senator Fletcher, speaking in the Senate to urge immediate consideration of the measure by the Banking Committee and its passage at the special session of Congress, expressed approval of the Administration currency bill as a commercial banking bill, but said it would not meet the needs of the agricultural communities because of the necessity for long-term loans.

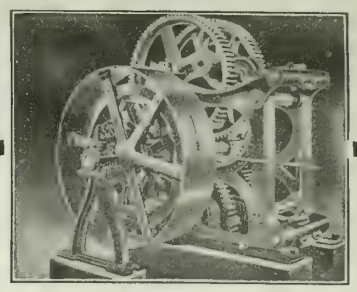
"It is obvious," said Senator Fletcher, "that the only method of furnishing capital for requirements of the farmer is the creation of a long-term first-mortgage bond, secured on his land, which bond shall contain a sinking fund provision, so that an amount shall be set aside each year to pay off the bond when it matures. The farmers' loans should run from twenty to fifty years. No banks can loan money for such a length of time. The money must be borrowed from the investing public. Here is where a special system of banks is needed which will be authorized to use their credit in guaranteeing such bonds under restrictions which will reduce the risk of such guarantees to a minimum."

The proposed Federal reserve system, the Senator said, did not offer such relief, and the provisions of his measure, he maintained, though not perfect, would meet the requirements.

SWEET POTATOES IN MERCED.

Frank Valadores of Merced planted seven acres to sweet potatoes last year. He says:

"I rented this land from a neighbor on a basis of two-thirds of the crop to me and one-third crop to him. I sold my crop for $1,050, and my expenses were about $50, so my profits amounted to about $95 per acre, and the owner of the land received about $48 an acre as his share of the crop. The soil in this vicinity is especially adapted to successful sweet potato raising. We have ample water to make our crops almost certain. My record is in no way unusual for any one season, as I know of at least a dozen other men who have been more successful than myself."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SPECIAL ALFALFA DRILL
20 discs, 4 in. apart
33 1/3 Acres Pays for an
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That is the actual waste in seed when broadcasted
We Can Prove it to You
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Stockton, Cal.
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Don't wait until your crop is dead but write us NOW and ask for catalog and information blank. We are experts and our experience is at your command.
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Cutter's Anthrax and Blackleg Vaccines
are given the preference by 80 per cent of California stockmen because they give better results than others do.
Write for Prices, Testimonials and our New Booklet on Anthrax and Blackleg.
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HOLSTEIN HEIFERS
3 two-year-old bred for first calf.
PENNANT DAIRY,
E. J. WELDON,
Box 962, Sacramento, Cal.

BREEDERS' SALES.

We wish to call the attention of purebred live stock breeders to this column. Sales of pudebred stock of all kinds will be reported here, free of charge, providing we are supplied with the animal's name and registration number, buyer's name and address. Below are the sales reported to us for the past month.

SHEEP.

Frank Mecham to L. C. Shirley, Chico, 10 head Shropshire bucks.

DUROC-JERSEY SWINE.

J. K. Frazer, Denair, sold to Reise Estate, San Francisco, two sows; Fred Craven, Cr., Anderson, one boar; Peter Merman, Turlock, one sow; John McCoombs, Denair, one boar.

Ed. E. Johnson, Turlock, sold five sows and one boar to William K. Peek.

Captain Coast Artillery Corps, Fort Barry, one sow to Clarence Eriksen, San Francisco; one boar to F. L. Busey, Orland; one sow to A. Cane, Turlock; two sows and one boar to W. H. Bailey, Turlock; one sow to Oscar Johnson, Turlock; one boar to W. H. Carroll, Napa; four sows to Evar Tornell, Turlock; one boar to G. E. Bachelor, Yerington, Nevada; one sow to Charles Soderquist, Turlock; one boar to G. A. Boug, Turlock.

POLAND-CHINA SWINE.

A. M. Henry, Farmington, to Thomas Gregory, Stockton, one boar.

JERSEY CATTLE.

X. Carrithers, of Tulare, sold bull calf Gertie's Alto Lad to Royal I. Waltz, Hanford; bull, Butter Boy Victor, to M. A. Luce, Santa Rosa; bull, Olga's Cretesia Pogis, to M. S. Masters, Tulare; bull, Fox's Lively Lad, to P. Staufer, Reedley.

HOLSTEIN CATTLE.

R. F. Guerin, Visalia, sold Wagne of Sunnyside to R. Kern, McFarland; Dew Hengerveld of Sunnyside to T. J. Smith, Tulare; Black Cloud of Sunnyside to H. H. Newman, Visalia; Tempest of Sunnyside to Joseph Silveria, Tulare; Washington Irving of Sunnyside to LeRoy Anderson, El Casco; Bonnie Lad Pontiac to Earl Bennett, Visalia; Iago of Sunnyside to Ralph Smith of Tipton; Leigh Hengerveld of Sunnyside to R. J. Ray, Tulare; King Conejo of Sunnyside to W. M. Robertson, Tulare; Brom Richelieu to George A. Barber, Los Angeles; Starlight of Sunnyside and Jane Cable to Hilo Boarding School, Hilo, Hawaii.

JAPANESE FARMING COMPANIES.

Before the new law about Japanese holding land in this State went into effect August 10th, four hundred Japanese of California combined in incorporated companies varying from three to nine stockholders and invested a cash capital of $1,082,075 in the purchase of farm land, vineyards and orchards. Ninety-nine companies sprung into existence since the Governor approved the alien land law. These companies have been formed in nineteen counties of the State, mainly in the Sacramento valley and San Joaquin valley, although a few have been formed in San Francisco, Oakland and Southern California.

In many instances the Japanese have subscribed for the entire capitalization. The combined capitalization of the ninety-nine companies is $2,146,000.

The contention of the Japanese is that though the Webb law prohibits the descent of land to heirs, not eligible to citizenship, there is nothing which debars a transfer of stock certificate.

ALFALFA IN THE FOOTHILLS.

To the Editor: In answer to a query in a late issue of the RURAL PRESS in regard to growing alfalfa on foothill soil, I will say that alfalfa can be successfully grown upon most all foothill soils of California, provided the ground is free from a heavy percentage of alkali, is properly prepared before seeding and proper attention is given while growing. No inoculation is necessary where burr clover grows. Most foothill soils east of the big valleys have sufficient lime. Clay soil is as good as any, provided proper drainage is given. If you wish, I will prepare an article on alfalfa growing under foothill conditions. Have grown it many years upon my ranch here. SUBSCRIBER.

Carson Hill.

[It will certainly be very interesting and acceptable.—EDITOR.]

WASTING MONEY ON ROADS.

The Office of Public Roads of the Department of Agriculture is making a strong effort to focus the mind of the country on the fact that maintenance and effective repair are of equal importance with the actual improvement of bad roads. Investment of money in new roads does not become real economy until provision is made for keeping these new roads in condition after they are built. If a new road was built and then allowed to fall into disrepair, much of the original investment is simply wasted.

Statisticians have found that although the average expenditure on the improvement of roads exceeds one million dollars a day, a large portion of the money in the United States is wasted because of the failure to build the right type of road to meet the local requirements or the failure to provide for the continued maintenance of the improvement.

The various states and counties within the past six months have taken a greater interest in road improvement than ever before in the history of the United States, and there is now a strong movement to conserve the roads of the country where they are improved. Scientific maintenance will be one of the chief features of the work of the Office of Public Roads throughout the present year.

Thirteen Hundred Hinman Milkers Sold in First Six Months of 1913

Now in many dairies of California because reliable, safe, and reasonable in price. Any man with eight cows may have the Hinman.

For price and opinion of California users, write

C. F. DANIELLS & SON,
Modesto, Cal.

SHROPSHIRES

Pure Bred and Registered
For 1912:
140 Head Yearling Rams
150 Head Ram Lambs

Enterprise Stock Farm
H. P. EAKLE, Jr. Woodland, Cal.

DURING THE STATE FAIR
I WILL OFFER FOR SALE

8 Purebred Holstein Bulls, 7 Purebred Holstein Heifers and 50 two-year-old Holstein Grades bred to Purebred Bulls for fall calf.

See us in the Holstein barns at the Fair.

E. J. WELDON,
Pennant Holsteins.

Duroc Jerseys

My herd won Duroc Jersey Association's Special Prize at 1912 State Fair. Will have some fine young stock, both sexes, at the Fair this year. Be sure to see them before buying.

ED. E. JOHNSON, Turlock, Cal.

10 PEDIGREED
HOLSTEIN-FRIESIAN BULLS
2 TO 16 MONTHS OLD, FOR SALE
Handsomely marked and well shaped. Prices reasonable. Call or write.
W. W. LAMON,
Supt. Floribel Farming and Cattle Co., Hardwick, near Hanford, Cal.

Notice, Dairymen

Satisfy yourself of the merits of the **Ideal Green Feed Silo** by seeing our 14x30 silo set up complete at the California State Fair to be held at Sacramento, Sept. 13 to 20.

Why experiment when you can buy a silo built by a concern *that knows* how?

We will also show Ensilage Cutter in operation, along with our new up-to-date Alpha Gasoline Engines. Also the popular De Laval Cream Separator and James Barn Equipment. Get catalog describing any of the above.

Our exhibit at the State Fair will be located just to the right of the main carriage entrance.

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QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

Look us up at the State Fair and let us get acquainted.

OAK GROVE DAIRY FARM
Woodland, Cal.

REGISTERED POLAND-CHINAS
(Large Type.)

Royal, Orient, and Chief Price blood. 3-year-old herd boar, Young's Wonder, and fine young stock for sale.

FAIRVIEW STOCK FARM
W. A. Young, Prop., Lodi, Cal.
Will show at the State Fair.

Live Stock Wanted

I am offering a practically new 1913 electric lighted and self-starter automobile in exchange for good dairy or beef cattle, or I will give a gilt-edge, second mortgage, due within a year, at 8% net per annum, payable monthly, or a good equity in city property, for stock. Am moving to the country and want good stock. If interested address

E. P. H., 927 Broadway, Room 49, Oakland, California.

Chicks That Die in the Shell.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Some time ago we had several inquiries as to the cause of chicks dying in the shell. As the hatching season was almost over the answers were, according to parliamentary rules, laid on the table. You know, or "oder as you don't know," as the Dutchman says, whenever anything difficult to answer comes up in politics, it is laid on the table.

And the causes that make chicks die in the shell are so varied in character that it is difficult to answer with any degree of satisfaction to either side. Only this week a letter came saying the writer had trouble with the chicks bleeding to death in the shell after the eggs were pipped. It is very evident, that in this particular case the trouble came from too rapid evaporation of the water from the egg, which caused the chicks to weaken. What strength there was left was expended on breaking the shell and exhaustion followed so quick after that the blood had not time to circulate.

This has been a very hard season on eggs, the hot dry air makes the egg shell very tough and the chicks must be strong to get through. It does not matter whether the eggs are under hens or in incubators; when the weather is dry enough to evaporate the water too rapidly the chick will always be weak, and even though it hatches, apparently all right it will rarely live through the stage of chickhood. Now when this is the cause it is not very difficult to apply the remedy if the eggs are set under hens. In spring it is all right to set a hen in a building or some quiet spot where she can keep the eggs warm and dry, but as the warm weather draws near we should reverse conditions and find a place where biddy can keep herself and eggs cool. In spring we put a nesting material that is warm and soft, in warm weather the very best nest is made of cool moist earth.

The egg shell is composed mostly of lime or calcium carbonate, and is porous so that air and moisture can enter to the embryo. When the air is hot and dry this limestone is almost as hard as in its natural condition, though of course its thinness and porosity prevents it going back to solid limestone.

In our warm dry climate the incubator should never be set, after April, in a room where the air cannot be made normal by the addition of moisture. This can only be done successfully by keeping the floor sprinkled every day. When the incubator is set in a room of the dwelling house this is almost impossible because we are not in the habit of having earth floors in our houses, and boards would dry out too quick. Hence the necessity of having an incubator cellar for good results. More chicks die in the shell from a too rapid evaporation of the contents of the egg which Nature has provided for that purpose than any thing else and when this item is remedied, as it can be, there will be less complaint of chicks dying in the shell.

Another very prevalent cause is that of mixing different varieties of eggs in one hatch. All eggs from the small breeds, such as Leghorns, Anconas, Minorcas, in fact all white eggs, hatch at least 24 hours earlier than the colored eggs, so it is easy to see that the chicks that mature first rob the rest of the very elements needed to give them strength to break the shell and come forth as bright healthy chicks. I would rather miss making a sale than sell eggs to any person who says he is going to put them in an incubator with white eggs, for no matter whether they hatch or not the chicks will never be quite as good, because they have not had a square deal in the beginning.

The next cause of chicks dying in the shell is just as common as any but very few people give it any thought, and others only ridicule it; just the same it is a very great factor in the loss of chicks.

When eggs are set in the first few days of a new moon the germ grows very rapidly, because all the forces of nature are behind it, and if conditions are favorable all through the hatch the growth of the embryo will, before hatching, fill all the space up in the shell and the chick dies because it has not room to work in. Any person who has hatched many chicks has seen times when the egg shell has been so filled, and wondered why such big fine chicks die. This condition can be greatly offset by running the incubator at a very low temperature the first week or ten days or by waiting a few days before the eggs are set. Of course, I don't expect everybody to agree with this idea; to many it will appear to be a fad. Well, there is no harm done; you don't have to be a faddist; pass it by, but if it appeals to you as reasonable, give it a trial next hatching season.

In speaking of the next cause of chicks dying in the shell we expect to step on dangerous ground, but "fools rush in where angels fear to tread," so here goes:

More chicks die in the shell from the negligence, carelessness, or ignorance of the operator than from all other causes combined. Now that is a rash statement, but it's true. There should never be but one person run an incubator, and that person should understand the machine before he ever trusts an egg in it. There is such a thing as "dutch luck," and I have seen people that were not entitled to one chick get as high as eighty per cent, but the next time they run the machine on the same principle, or lack of principle, they got it in the neck. Eggs with good strong germs will always hatch if given a show, but when an incubator is run one day or several days at a low temperature, then suddenly allowed to run up to 105 or even higher, then turned back to perhaps 95 when night come, all these changes go towards weakening the chick. One man told me he run his incubator in the bath room and when the family bathed the temperature ran up as high as 108 because the hot water tank affected the air of the room, but he said the cool nights more than balanced that up for some nights the thermometer in the egg chamber went down to 90. Yes, and he actually got chicks, though not enough to please him, and he said he thought I ought to replace the eggs. Now, was not that the limit, after confessing to such carelessness?

Now we come to the parent stock, and this is generally the point where every person that buys eggs tries to dump all his own neglect and place the blame. And, mind, I am not saying that it is not deserved in a great many cases, because when eggs are from good strong parent stock that are fed and cared for right, they will stand a whole lot of neglect. The stock should be healthy, more than that, they should be fed so that egg production is not forced by stimulants, but is rather a natural sequence of vigor and healthy. While it is right to breed from good laying stock, it is foolish to force the laying by unnatural methods. Plenty of good whole grain, grit, shell and, if it can be had, skim milk to drink, sprouted oats for green feed, or alfalfa, if milk is not available, animal food of some kind should be fed at least once a day. I draw the line on all forms of mash, whether wet or dry, for the heavy breeds, any way, as the hens lay up too much fat for best results when fed mash. Once in a while just to give them a relish a little moist mash may be given, but not too often and not much in quantity. Sprouted oats fill the bill as a green feed for breeding stock; not having much superfluous water, they do not weaken the germ. I know that while chicks will hatch from eggs laid by hens fed on mashes, the chicks are rarely strong enough to last through the first two weeks of chick life, so that all the work goes for nothing.

It is not the amount or number hatched that counts at the round-up, but the number raised. What good does it do to hatch 100 chicks and lose 50 of them? Some people claim if they raise 50 per cent of the chicks they hatch they are satisfied, but I am not. I want to raise all of them. And there is no reason at all why we should not raise all, barring accidents. At least we should never be satisfied with less than 90 per cent chicks raised from every 100 hatched. When we raise less there is something wrong somewhere and it's time to find out where and what it is.

Hopland SINGLE COMB White Leghorns

Your success in the Poultry business depends upon the constitutional vigor and heavy laying qualities of your birds.

Hopland Cockerels have been bred for constitutional vigor and from heavy laying strains.

You can increase the laying qualities of your birds by using Hopland Cockerels.

Two for $5 or $25 per doz. Can spare only a limited number.

Hopland Stock Farm, Hopland, Cal.

POULTRY DEPARTMENT

STATE FAIR CHICKEN CONTEST.

The chicken judging contest will be held Monday, September 15th, the third day of the fair in the poultry building, where some of the best birds on display will be placed in the judging ring.

The youth between the ages of 17 and 21 years who has never had technical training at an agricultural college may win a $25 scholarship training at the University Farm at Davis as a first prize. The second prize will be $15 for the purchase of breeding stock and $10 for the purchase of eggs for hatching.

AMERICAN SUGAR CONSUMPTION.

Americans continue to be the greatest consumers of sugar in the world, as set forth in figures today by the Bureau of Foreign and Domestic Commerce. In the year 1913, ending June 30th, the United States used 8,000,000,000 pounds of sugar, an amount never disposed of before in any twelve months.

Of this great avalanche of sweetness, one-half was imported from foreign countries, one-fourth from the Nation's island possessions and the remainder was produced at home. Cuba contributed nine-tenths of all the sugar received from abroad exclusive of the island possessions. Of these, Hawaii contributed the greatest amount, Porto Rico and the Philippines following in the order named.

Sugar produced within the United States, the report sets forth, was only one-third cane sugar, the remainder being derived from beets.

POULTRY.

ORPINGTONS, BUFF AND WHITE—Summer sale of stock. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

FOR SELECTED EGGS AND CHICKS from S. C. White Leghorns, see Hopland Stock Farm advertisement.

CROLEY'S PIONEER EGG MAKER—Makes poultry pay when egg prices are low.

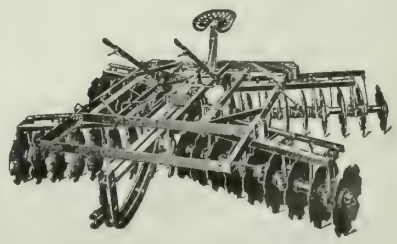
CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

BRONZE Turkeys and Eggs. Ed. Hart, Clement, Cal. Large size, good plumage, early maturity.

CROLEY'S HIGH GRADED HARD SHELL—The leader in poultry shell.

Prepare for Egg Production
Get a good supply of
COULSON'S EGG FOOD
and begin to condition your hens for a big production when prices are high in the fall. Start in time to get the egg machinery working right when you make the greatest demand on it.
COULSON POULTRY & STOCK FOOD CO.,
Petaluma, California.

PENNANT STRAIN
BARRED and BUFF PLYMOUTH ROCKS.
A few choice cockerels and pullets left. Eggs for hatching after January 1st.
JAS. M. MONTGOMERY,
4360 Fleming Ave., Oakland, Cal.



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Strongly built, simple in construction, easily operated.
It isn't a question of whether you can afford one, but whether you can afford to do without one.
Write for Prices and Catalog.
THE H. C. SHAW COMPANY
Stockton, Cal.
Wholesale Distributors.

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United States and Foreign Procured and Defended. Established 40 years.
PACIFIC COAST PATENT AGENCY, INC., STOCKTON, CAL.

The Home Circle.

How Joe Earned His New Suit.

"If you're so turrible anxious to have a new suit, why don't you go earn the money for it? I've a dozen uses for every red cent I have." The scolding voice ceased as Aunt Pheezy plunged the big ladle deeper in the boiling kettle, sending out a cloud of unsavory steam that filled the old kitchen and drove Joe out in a hurry.

"There is no hope of school for me this winter, that's certain," sighed the lame boy to himself as he glanced down ruefully at his miserable clothes, only held together by the numerous patches.

Like a swarm of tormenting imps his troubles rushed over him. How much he had suffered in the long, long years since his father died, leaving the little cripple dependent on Aunt Pheezy! The loveless life, the skimpy fare, the endless chores, and the old woman's nagging tongue, had been bitter, but this last trial was worst of all. To hear all "the fellows" talking of studying with the new teacher from York, when he must stay away on account of his wretchedly thin clothing, was more than he could bear; and he could not possibly find work now, for the farmers near by did not like to employ a lame boy. Even in summer he had seldom found a chance to earn a quarter weeding or picking fruit.

From force of habit he found himself wandering down the hill to the beach. The sun was setting in a blaze of glory. His last rosy beams danced in a broad pathway across the water and lighted up the picturesque confusion of the old shipyards, the rickety sheds, and weather-beaten boats hauled up on the railways for repairs. The carpenters, quick to heed the 6 o'clock whistles, were reaching for the coats and dinner-pails hanging on the low pollard willows. One or two were collecting armfuls of clean bits of pine to kindle the good wife's fire at home. Merry, chaffing remarks passed from one to the other as they disappeared up the well-worn pathway. One tall young man marched gayly, shouting a popular song at the top of his lungs.

Swedish Jan was still busy, outlining a name on the stern of a small sloop. A tiny shaving curled away from the slender tool he held in his hand. As Joe stood watching, the name Eleanor appeared, each letter surrounded by a cleanly cut groove.

"There! that's all ready to be gilded tomorrow," said the man. Turning to replace the tool in his box, he saw Joe at his elbow. "What brings ye here tonight, lad?"

Joe, encouraged by the kindly tone, poured out his troubles and begged for work.

"Nay, laddie, 'tis too hard for ye here," looking pityingly at the crooked little figure. "Stay! I've an idea. Here's the parting-tool ye saw me using just now. Ye're clever at whittling and can draw. Can't ye manage to do a bit of carving that would sell up at the village? I've got an old V tool here that I'll make ye a present of. It's worn down till it's 'most too short for my big fingers, but it will fit yours first rate. See, you must push it through the wood in this way; let it cut out the pencil mark quite evenly. Here's a smooth, square piece of pine that will just do for a table top. Take it home with you, draw a few ivy leaves on it, cut them out neatly, and bring it back to me."

"Oh, thank you, Jan; you are the only real friend I have," cried the boy, as he hurried home with his treasures. All that evening, by the light of the kitchen fire, he practiced cutting lines on an old starch-box cover. At first it was difficult to push the parting-tool across the grain; he found it necessary to sharpen the steel often on his little oilstone; but his fingers soon learned the knack of cutting a fine, even line.

The next morning he toiled like a small steam-engine, feeding chickens, drawing water, and chipping kindling, until Aunt Pheezy's eye could see no task left undone. Then he plucked a branch from the ivy that overran the side of the old house, and betook himself to a sunny corner of the woodshed. Laying the ivy gracefully on his board, he fastened it down flat with a few pins and traced each leaf and stem on the clean, white wood with a lead-pencil. It took him all the rest of the day to cut out his pencil marks, but late in the afternoon he carried it down to Jan.

"Well done, laddie; that looks nice. Now I will mix a little of this walnut stain with turpentine in this old can, and you may paint over all your design inside the lines with this little brush. See; the fine groove that you have cut prevents the brown from spreading beyond it. When you get through, stand it up under the shed to dry."

The next day at noontime Joe went again to the shore, for he knew that Jan would then have a few minutes to spare for talking. Mr. Brown, the "boss," as the men called him, never allowed idlers about the yard to hinder his men during working hours.

Jan was eating his dinner, carelessly balancing himself, meanwhile, on the end of the long, horizontal beam to which the horse was attached when it was necessary to draw a vessel out of the water on one of the railways.

"There are two bottles for you, Joe, up yonder on the shelf. Bring them here with your table-top, and I'll show you how to polish it. See, I put just a little of this shellac varnish on this piece of canton flannel and rub it on well with a circular motion. It absorbs it very fast at first, as this pine is so porous. Now it is getting rather sticky. I must dip my finger in the oil and touch the wood. That will help to spread the varnish smoothly."

"How beautifully it brings out the grain of the wood and the colors!" said Joe, admiringly. "It looks exactly like a wreath of walnut inlaid in the yellow pine."

"Yes; a good bit of what folks call inlaying is done in this same way. Now leave your board to dry until tomorrow where no dust can fall on it, then varnish it two or three times again. There's the whistle! I must get to my work again."

The next morning Joe rubbed his board lightly with sandpaper until it was quite smooth, then gave it three vigorous rubbings with the varnish, touching the surface with oil as it became sticky. He allowed half an hour between each rubbing for the varnish to dry.

When he carried the brightly polished table-top to show Jan at midday, the man exhibited it to Mr. Brown, telling him at the same time something of the boy's story.

"Needs money, does he? Why, this table will just suit my daughter's parlor. I will give it to her for a birthday present; that is, if you can contrive legs for it in time. Here's a dollar for the lad. Tell him he is welcome to work at the little bench in the shop, and he may help himself to anything he can find in the heap of odds and ends in the corner."

Overjoyed at this kind of treatment from Mr. Brown, Joe set to work with redoubled ardor. When the table was presented to Miss Brown, she shared her father's interest in the boy, and secured several orders for him among her friends.

The first thing he made was a blotting-book, the covers of which were formed of two pieces of cedar ten inches wide and twelve long. On each he cut three irregular chrysanthemums. After the boards were varnished, he glued to them a piece of light blue felt twenty inches wide and twelve long, for a lining, forming a book. Leaves of blotting-paper were then tied in with blue satin ribbon to match, the ribbon ending in a bow at the back. The reddish brown of the cedar with its dark chrysanthemums formed a pretty contrast to the pale blue. He made several blotters of different designs—two of fine white pine were decorated, one with violets, the other with wild roses. Both were varnished with bleached shellac to keep the wood light in color. One was lined with violet cloth, the other with pink.

Good-natured Jan sawed out a dozen

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photograph frames for him one evening. Joe sandpapered them nicely, and decorated them in the same way. These found a ready sale, and Joe earned enough money before school began to buy not only a pretty blue suit, but a heavy overcoat and shoes.

The first day he appeared in them at school was the beginning of a new era for the boy. The eager interest he took in his studies soon attracted the attention of the new teacher, himself a young man just past boyhood and fresh from college. With many a long talk out of school hours, and many an inspiring look, he encouraged the little cripple.

The boy still continued to do his simple carving, for finger-work did not interfere with brain-work, so problems and picture frames, grammar and glove-boxes were finished at the same time in the long winter evenings.

His first bit of decoration was a marvelous tobacco-box for Jan, covered with an ingenious tracery surrounding mermaids, dragons and all sorts of queer beasts, copied from one of Mr. Smithers' books.

The teacher's high opinion of Joe's talent prompted him to send one of the boy's graceful designs—a panel over which trailed a riotous Virginia creeper—to a friend who was engaged in decorating the interior of houses in the city. He employed many skilled workmen in the various branches of his business, and often lamented the necessity of giving the best work into the hands of foreigners.

"Why cannot some of our bright American boys perfect themselves in a trade as these Italians and Frenchmen do?" he would often say. "Here's our good gold going into their pockets, while our young men are half-starving themselves behind counters in order that they may be dressed up like gentlemen, with nice white hands."

In this strain he wrote to Mr. Smithers, offering at the same time to give Joe a year's course at a school for manual training if his health permitted. So it came to pass that when the teacher departed for his city home, Joe went with him. Aunt Pheezy, when it was revealed to her that she was about to lose her willing little slave, was full of doleful prophecies. Even Mr. Smithers felt many misgivings as to the boy's powers of endurance, but to everyone's surprise, he soon began to grow stronger. Newly roused ambition whispered to him that even a little cripple might do something to make the world richer and more beautiful. He has now been working busily for many months at the training school. His lameness will not allow of his undertaking all of the branches, but he excels in designing, modeling, and his favorite woodcarving. Visitors to the school look with admiration at the rich garlands, the birds and cherubic faces which grow under his small but skillful fingers. His keen-edged chisel often rests a moment as he dreams of the happy time when, his course finished, he will be free to follow his own fancy and produce wonderful pieces of furniture and charming panelings and balustrades rivaling the masterpieces treasured in European palaces.—Kate Cotheal Budd, in Harper's Young People.

The movement throughout the world to pass laws that will prevent the marriage of those afflicted with transmissible diseases, or those that are imbeciles, epileptics, or of unsound mind, is a move that should receive the approval of every right-thinking man and woman. Many diseases are transmissible to the third and fourth generations, and the children of afflicted parents sap the vitality of the race and become burdens upon the State. Only the healthy should be allowed to marry.

Property, Crime, and Boys.

If you want to make a criminal of a boy, rear him in a home and send him to a school where he never owns any property. Or what is equally good for the making of criminals, keep giving the boy pigs that become father's hogs, calves that become father's young cattle, and colts that become father's horses. Our whole civilization rests upon our theory of property rights. We base our law on the theory that a man has a right to the product of his own hands and brain. Break that theory down, and socialism, anarchy, heedless expenditures — name it what you will, it will come.

Now there is no defense to be made for public schools maintained by public taxes, unless those schools make better citizens. The first and basic element in good citizenship is ability and desire to make one's own living and to let others make their own living. If it be true, as statistics seem to prove, that about eighty per cent of all criminals are propertyless people, who were never taught to do anything skillfully, then with property and skill in handling property is the place to begin the work in the making of good citizens. It must not be understood that we claim that this basic element in citizenship is all that there is to good citizenship. We must have a large percentage of the people able to gather and disseminate the culture of the past, or we go backward. We must have another reasonably large per cent engaged in discovering advanced truth, or we remain where we are, only to find ourselves soon surpassed by other nations who will be our conquerors.

When we come to look into the matter, property seems to be a magic wand to unlock the intellect and furnish the means for the cultivation of the moral side of man. By thinking on his first rude tool, be it his club or his stone knife, the savage got his first lessons in attention. By attempting to ornament his rude club, stone hammer, or knife, he got his first lesson in art. As the baby sits looking at some part of its body and comparing it with things around him, he gets his first lessons in attention and in the development of self-consciousness. Meditation on what is mine and what is thine, what do I do and what do you do, how do I feel and how do you feel—such thoughts probably most clearly differentiate the man from the brute. When a visiting child sits in the highchair or plays with the trinket, we see that the baby has a sense of ownership of property, and we are apt to see the first social conflict. The sight of another child in his highchair makes the baby's mind glow at white heat, emotions are up, he is ready for battle royal. His moral development is started. Where does it lead—to the penitentiary or to "he that loseth his life" in the service of others only to find life more abundantly?

If you want to find a town delivery boy who ruins your lawn, find a boy who never grew a tree. If you want to find a boy who loots fruit patches, find a boy who never had a garden and never grew fruit. If you want to find parents who condemn the man who would have a boy arrested for stealing three strawberries—the only strawberries on a new and choice variety—find a father and a mother who never had a good garden, and who are not teaching their child to make a good garden each season. In short, ownership and respect for the property rights of others grow together. When the people of Iowa become fully conscious of the significance of gardens, every school will have its garden, and the school-children will do in Iowa just as they have been found to do in other places—more school work in the common branches, with some time spent in their gardens, than they now do without the interest and culture that come from first hand and vital contact with property. But the products of the garden must belong to the children, or we lessen their respect for property rights—the very thing that our courts, our police, our governmental machinery, are maintained to establish. What fools people are who hire a police to suppress child activity during the long summer vacation instead of hiring teachers to guide child activity and to cultivate respect for property by enabling the children to create property of their own!—A. D. Cromwell in Register.

McMasters was walking with a beautiful girl in a wild New England wood. "What is your favorite flower, Mr. McMasters?" the girl asked, softly.

McMasters thought a moment, then he cleared his throat and answered: "Well, I believe I like the whole wheat best."—Washington Star.

She finished a tirade at her friend and ended with: "There, I think I have made made myself plain, have I not?"

"Made yourself plain, dear?" sweetly answered the once friend. "Oh, no, dear; you were born that way."—Ladies' Home Journal.

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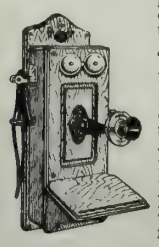

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THE MARKETS.

San Francisco, August 27, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The local market remains quiet, though there is considerable grain coming in. Northern red shows another slight decline, but other lines are steady at the old quotations.

California Club, ctl	$1.52½@1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½@1.55
Northern Bluestem	1.67½@1.70
Northern Red	1.55 @1.60

BARLEY.

Offerings of barley so far have been light, and prices have taken a sharp upward turn, though the spot market is not especially firm at the new figures. The crop is too light for much export movement, and it is reported that a large percentage of the grain is of poor quality.

Brewing and Shipping	$1.40 @1.45
Choice Feed, per ctl	1.35 @1.40
Common Feed	Nominal

OATS.

Oats are rather firm, in sympathy with barley, but trading here is quiet and prices so far have not been changed.

Red Feed	$1.65 @1.85
Seed	Nominal
Gray	Nominal
White	1.55 @1.60

CORN.

With continued unfavorable weather conditions in the corn belt of the Middle West, further advances have occurred in the primary markets, which are reflected in local prices for the Eastern grain. California corn is not very plentiful, and the price is governed by Eastern conditions.

California Yellow	$1.95 @2.00
Eastern Yellow	1.95 @2.00
Eastern White	Nominal

RYE.

There is little demand, and some stock is offered below the regular range of quotations, though such offerings are not of desirable quality. First-class stock is scarce and anything really choice will bring full prices.

Rye, per ctl	$1.45 @1.50

BEANS.

Cutting of lima beans is now under way in the south, and several varieties are being harvested in the central California district. With the new stock coming into the market very shortly, trading is very quiet, and prices have dropped a little, as usual at this season, some holders being anxious to clean up their old stock. The yield is turning out much better than was expected a few weeks ago, but is estimated at only about two-thirds of a full crop, in view of which a fairly firm market is expected as the fall trade gets under way.

Bayos, per ctl	$3.15 @3.25
Blackeyes	3.15 @3.35
Cranberry Beans	4.25 @4.50
Horse Beans	1.90 @2.15
Small Whites	5.00 @5.25
Large Whites	4.00 @4.25
Limas	5.25 @5.40
Pea	Nominal
Pink	2.75 @3.00
Red Kidneys	3.25 @3.40
Mexican Red	3.50 @3.75

SEEDS.

No demand of any consequence has appeared as yet, and prices stand nominally as for some time past. The alfalfa seed crop in the Tulare district is said to be only half as large as last year, and somewhat better prices are expected, though so far there is no indication of an advance over the present range.

Alfalfa	12½@14 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	6 @ 6½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

Bakers' extras have been marked up a little, but otherwise there is nothing new in the market, the movement showing little fluctuation in this market.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	5.20 @5.50
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Arrivals for the last week were nearly as heavy as for the week preceding, but it is expected that shipments from the country will begin to decrease from now on, as dealers have been buying very little for some time. Sales locally are now very light, and while a good proportion of the arrivals is being taken on old orders, dealers have been compelled to use more storage space than usual. Fancy hay in light bales is scarce as usual, and would bring more than the regular quotations, but the grades quoted are naturally weak under present conditions. Values, however, are not quotably lower than last week. Business is also quiet in the country, as most buyers are well supplied for the present and are not anxious to increase their stocks, while growers in some districts are seeking storage facilities. In districts of light production, however, the fields are already well cleaned up.

No. 1 Wheat, or Wheat and Oat	$15.50@16.50
do No. 2	14.00@15.50
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 95c

FEEDSTUFFS.

The advance in cracked corn has curtailed the demand, and prices remain as before. Rolled barley, however, has gone up in sympathy with the whole grain, and oats are also higher.

Alfalfa Meal, per ton	$18.50@19.50
Bran, per ton	26.00@27.00
Oilcake Meal	32.50@33.00
Cocoanut Cake or Meal	28.00@29.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	28.00@29.00
Rolled Oats	34.00@35.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Onions are quoted a little lower, though arrivals have been rather light for the last few days. Garlic is higher, and supplies are rather closely held. The hot weather at the end of last week caused considerable damage to tomatoes, and arrivals are running much lighter than a week ago, practically nothing of desirable quality being offered. Choice stock has sold as high as $1 per box of late, but at present there is none on hand, while ordinary offerings clean up fairly well at an advance from last week. Beans and peas are lower on liberal supplies, and lima beans have dropped sharply. Cucumbers also show a further slight advance, while summer squash has dropped back to about the old figures. Green corn remains steady at about the former level, both supply and demand being fairly large.

Onions: New Yellow, River, ctl	90c@$1.05
Garlic, per lb	4½@ 5c
Cucumbers, per box	35@ 60c
Green Peppers, box	30@ 50c
Carrots, per sack	75c
Cauliflower, per doz	50@ 60c
Green Peas, lb	3@ 4c
String Beans, lb	2@ 4c
Summer Squash, lug box	50@ 75c
Green Corn, choice, sack	75c@ 1.75
Okra, box	40@ 50c
Tomatoes, box	40@ 75c
Eggplant, box	35@ 75c
Lima Beans, lb	2½@ 4c

POTATOES.

River stock is coming in quite freely, and ordinary lots are a little easier, though desirable stock brings about the same as before. Sweet potatoes are beginning to accumulate, and have again dropped rather sharply.

New River Whites	90c@$1.25
Sweet Potatoes, per ctl	$ 1.50@ 2.00

Dairy Produce.

POULTRY.

Business has been rather slow, with continued large arrivals of Eastern chickens. Local stock, however, is less plentiful than for some weeks past, and while the market is well supplied, a slight advance is noted in broilers and extra hens.

Large Broilers, per lb	25 @26 c
Small Broilers, per lb	25 @26 c
Fryers, per lb	24 @25 c
Hens, extra, per lb	17 @18 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	24 @25 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.75@ 2.25

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BUTTER.

Butter has shown a little fluctuation this week, probably due to increased offerings of storage stock, which tends to curtail the demand for fresh. Fresh extras, however, are in limited supply and show a little firmer tendency at present. Firsts are ½c lower.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32½	32½	32½	31½	31½	32
Prime Firsts	30	30	30	30	30	30
Firsts	29	29	29	29	29	28½

EGGS.

Extras have receded somewhat from the high price of a week ago, but are now fairly steady as quoted, and pullets are in good demand at a ½c advance, though offerings of Eastern stock are fairly large.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32½	32	32	32	32	32
Firsts	27	27	27	27	27	27
Selected Pullets	26	26	26	26	26	26½

CHEESE.

Supplies are rather light at the moment and fancy flats have again reached 18c, being steady at this figure. Y. A.'s, however, are ½c below the last quotation.

Fancy California Flats, per lb	18 c
New Young Americas, fancy	16½c
Monterey or Jack Cheese	14@15c

Deciduous Fruit.

The berry market is still in rather poor shape, with liberal supplies of all descriptions, and raspberries are lower, though good blackberries can be sold at a slight advance. The demand for apples is limited, and while production is rather light in most lines, prices locally are not altogether satisfactory. Several different varieties are now coming in, Gravensteins and bellefleurs being stronger than anything else, with a top price of $1.50. Strictly first-class Bartlett pears are rather scarce and firm, but there is considerable ordinary stock on the market, together with ripe fruit which has to be moved quickly and cannot well bring full prices. Peaches show a very wide range, with liberal offerings of local stock in unattractive condition, while fancy Oregon stock is about all that will bring 75c per box. Carriers, however, are doing fairly well. Plums and prunes are plentiful and easy, and the white varieties of figs receive little attention, though black figs find a fair demand. The market is still filled up with cantaloupes, which move slowly at low prices and cannot all be disposed of. Watermelons also are lower, and grapes show a general decline with steadily increasing supplies.

Strawberries (chest):	
Banner	$ 3.00@ 4.00
Other kinds	2.25@ 3.50
Loganberries, chest	2.50@ 5.00
Blackberries, chest	1.75@ 3.50
Huckleberries, lb.	5c@ 7c
Raspberries, chest	7.25@ 9.50
Apples:	
Gravensteins, box	$ 1.00@ 1.50
Astrachans	90c@ 1.30
Greenings	75c@ 1.00
Bellefleur	1.35@ 1.50
Common	50@ 75c
Crabapples, large box	75c@ 1.00
Pears, Bartlett, wrapped, box	65@ 75c
Lugs	75c@ 1.25
Peaches, box, wrapped	25@ 75c
Carriers	70@ 90c
Lugs	65c@ 1.00
Plums, crate	40@ 50c
Prunes, box	25@ 75c
Figs: Single layer, drawer	35@ 50c
Nectarines, crate	65c@ 1.25
Cantaloupes, large, crate	50c@ 1.50
Nutmegs, crate	25@ 65c
Watermelons, per dozen	1.25@ 2.00
Grapes: Seedless, crate	40@ 50c
Malaga	50@ 70c
Muscat	40@ 60c
Black	40@ 65c
Tokay	75c@ 1.25

Dried Fruits.

The dried fruit market remains in good condition all round, with an active buying movement in most lines and a continued upward tendency as to prices. The amount purchased so far is rather surprising in view of the financial situation, and it is believed that very little has been sold by growers that is not needed by packers to take care of current business. Some new apples are being contracted at an advance over old stock, the crop here being very moderate, while a serious shortage is reported in the East. Apricots are rapidly cleaning up, and most of the figs have been contracted for. Old prunes are getting into very narrow compass, and show an advance, while packers believe that as much as 85% of the new crop has been sold, and that the market is good for 1 to 2c advance within the next few weeks. Peaches are quite firm as last quoted, with everything in favor of the maintenance of present prices, if not an advance. It is believed that considerably over half the crop has been sold, while the old stock is practically all in packers' hands and it is not believed that much is left. The raisin market is in the hands of the Associated Company, and values are well maintained, though Eastern buyers are proceeding rather slowly.

Evap. Apples, 1912 crop, lb.	6½@ 7 c
do 1913	7½@ 8½c
Apricots, 1913	12 @14 c
Figs: White, 1913	3 @ 3½c
Black, 1913	2½@ 3 c
Calimyrna, 1913	4½c
Prunes, 4-size basis, 1912	4½@ 5 c
do 1913	5 @ 5¼c
Peaches, 1912	4¾@ 5 c
do 1913	4¾@ 5 c
Pears, 1913	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912	3½c
do 1913	3¾c
Thompson's Seedless, 1912	4¼c
do 1913	4 @ 4¼c
Seedless Sultanas, 1912	3½c
do 1913	3½c

Citrus Fruits.

Oranges have been marked down a little at the top figure, and are moving rather slowly here at present. Other citrus lines are in fair demand, and prices on most descriptions are pretty well maintained, though lemonettes are somewhat easier.

Oranges (per box):	
Valencias	$ 4.00@ 5.50
Grapefruit, seedless	2.00@ 4.50
Lemons	5.00@ 7.50
Lemonettes	4.50@ 6.00
Limes	10.00@12.50

Nuts, Honey, Hops, Etc.

NUTS.

No very heavy movement of new almonds is reported as yet, as most buyers are inclined to proceed with caution. Walnut prices are altogether nominal.

Almonds, new crop—	
Nonpareils	17 c
I X L	16 c
Ne Plus Ultra	15 c
Drakes	13 c
Languedoc	12½c
Hardshells	7 c
Walnuts, 1912 crop—	
Softshell No. 1	16 @16½c
Hardshell No. 1	15 @15½c
No. 2	10½c
Budded	17 c

HONEY.

Most buyers in this market are fairly well supplied, and there is not much business outside of the regular jobbing trade at present. Prices, however, are held pretty well up to the old quotations.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Light	30 @32 c
Dark	28 @30 c

HOPS.

There is a gradual movement in the country at about the previous values, but a good many growers are holding off in hope of a further advance.

1913	20 @22 c

Live Stock.

The expected decline in hogs has come, with a little increase in supplies, and all weights are quoted ¼c lower. Lambs are also ½c lower, other lines being about as formerly quoted.

Grass-fed Cattle—	
Steers: No. 1	7 @ 7¼
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7 @ 7¼c
Medium	6½@ 6¾c
Heavy	5 @ 6 c
Hogs: Grain-fed, heavy	8 @ 8¼c
150 to 250 lbs	8¼@ 8½c
100 to 150 lbs	8 @ 8¼c
Prime Wethers	4¼@ 4½c
Ewes	3¼@ 3¾c
Lambs: Suckling	5 @ 5½c

DRESSED MEATS.

Steers	12 @12¼c
Heifers	11 @11½c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

There is a gradual light movement, which has taken up the clips in a good many places, but the majority of buyers are taking no interest and few care to buy except at bargain prices.

Spring clip:	
Southern mountain, free	8 @11 c
Northern, year's staple	13 @14 c
Humboldt, year's staple	18 @19 c
do short	13 @14 c

HIDES.

Values are quite firmly held at the recent advance, though there is no important buying movement anywhere at present. The firmness is apparently due to the comparatively light supply all over the country.

Heavy Steers, over 56 lbs.	14½c
Medium	13½c
Light Steers, under 48 lbs.	12½@13½c
Heavy Cows, over 50 lbs.	12½@13½c
Light Cows, 30 to 50 lbs.	14 c
Kip	14½@16 c
Veal	17½@19 c
Calf	17½@19 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

Values are almost entirely nominal, as few horses have been brought into this market lately and the demand so far shows little sign of improvement. While more activity is expected within a few weeks, there is little chance to sell here at satisfactory prices at present.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

Owing to the failure of the potato crop in other sections of the West, the demand for spuds from the Stockton section is such that as fast as they are dug the potatoes are shipped out. It now looks as though prices the coming winter will be very high. No potatoes are being stored, as the shipping demand of nearly 30 cars per day at Stockton uses up all the surplus.

William Henderson and A. J. Evans recently paid $40,000 for 320 acres of grain land near Merced, from M. Horan. The new owners propose to turn the property into a first-class stock ranch. Irrigating plants are to be installed, and the land seeded to alfalfa.

For Sale

10,000 feet 6-inch Screw Joint Casing.
14,000 feet 3¼-inch Screw Joint Casing.
All re-dipped in Pure Asphaltum. Was in use only a few months.
Good as new.
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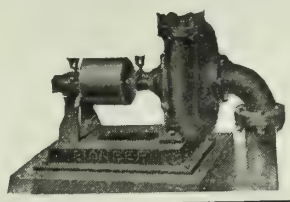
TEN THOUSAND HEAD OF TURKEYS WANTED FOR THANKSGIVING.

We want the farmers of California to raise ten thousand head of choice turkeys for our Thanksgiving trade. Last year we sold fancy dressed turkeys as high as 30 cents a pound. Commence now to get your turkeys ready for the Thanksgiving market. Have them as large and fat as possible. Write us immediately how many head you will have ready for sale at this time, as we want to keep in touch with you from now on until after Thanksgiving and Christmas. Send us the names of all of your neighbors who have turkeys and about how many head each one has on hand, and we will certainly make it to your object to do so. Mark and consign all produce you have on hand to us at San Francisco.
W. C. PRICE & CO., General Produce Commission Merchants, 211-217 Clay St.



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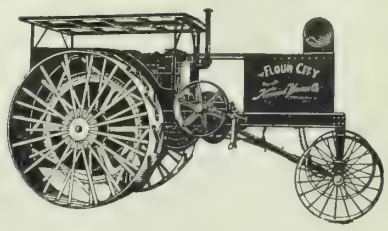
Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.
Our retail prices are less than our competitors' wholesale prices.
We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.
PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

"Flour City" TRACTORS



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Made in 20, 30 and 40 H.P.
SAVE YOUR MONEY
by writing us for
REDUCED PRICES
before you buy any other.
WRITE FOR CATALOG.
THE H. C. SHAW COMPANY
GENERAL AGENTS
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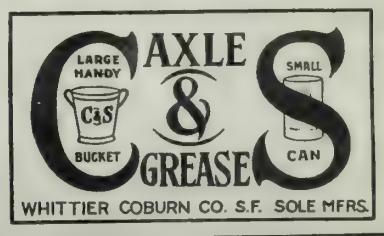
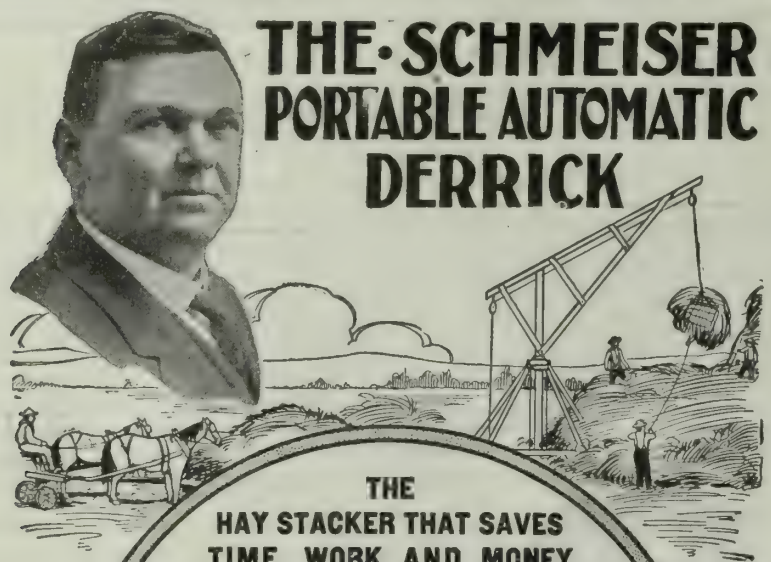
Stump Pullers
CALIFORNIA STUMP PULLER CO., 704 Bryant St., San Francisco



The Glen Park Stock Farm, east of Fresno, comprising 280 acres, was sold last week and is to be subdivided into five-acre tracts to be used for vegetable growing.

The Huston tract, containing 1,318 acres of fine land east of Winters, Yolo county, is to be subdivided and sold in small tracts.



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THE HAY STACKER THAT SAVES TIME, WORK AND MONEY

This derrick will handle hay, loose or baled, in the easiest, quickest and most economical manner known. It is always ready, is portable and can be moved from place to place as easily as a farm wagon. With it three men can do the same amount of work as nine men by hand. Has great lifting capacity and is unequalled for hoisting machinery, timbers, or heavy loads of any kind.

WRITE US TODAY and we will send you descriptive and illustrated literature. The Schmeiser Portable Automatic Derrick is not an experiment. It is the result of 25 years of actual experience gained in farming. It is being used with great success all over the Pacific Coast. Write us **NOW** for full details explaining just what it can do and how it can save you time, work and money. Address

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123 Second St.,
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PILES UP HAY AND PROFITS

USED BY ALL MODERN FARMERS

California State Fair

Sacramento, California

September 13-20, 1913

WILL BE THE GREATEST SHOW OF HIGH BRED LIVE STOCK EVER EXHIBITED ON THE PACIFIC COAST

Premium List has been enlarged so as to take care of a larger number of classes, and in some instances materially increased.

Especial attention is called to the fact that a liberal increase has been made in classifications and premiums on dairy products.

The Poultry and Pigeon Department has been revised and an increase has been made in premiums. In Pigeon Department no first premium will be less than $1.00; no second premium less than 50c.

A classification has been made for market culinary animals, providing premiums for rabbits and hares.

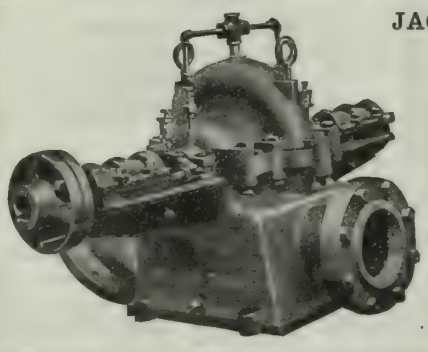
There has also been established boys' judging classes, and the sum of $400.00 set aside for premiums for boys who prove the best judges of live stock.

Premiums are provided for the best displays of Indian corn and spineless cactus.

Premium list is now being prepared. Send in your name now, to be placed on the mailing list.

ADDRESS, J. L. McCARTHY, SECRETARY,
State Agricultural Society,
Box 592, Sacramento, California.

A. L. SCOTT, President.



JACKSON HORIZONTALLY SPLIT DOUBLE SUCTION PUMP

WATER IS WEALTH

No place is this more true than on the farm. Irrigation economically and intelligently performed produces dollars where cents previously grew.
For economical, efficient and continuous work in the Irrigation System, on the Orchard and Farm the **Jackson** pumps have met the severest tests.

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Los Angeles: 212 North Los Angeles St.
Works: West Berkeley, California.

8 Daily Trains to Los Angeles

QUICKEST SERVICE—SHORTEST ROUTES

SHORE LINE LIMITED	Lv. San Francisco	Third St. Station	8:00 a.m.
	Ar. Los Angeles		9:50 p.m.
	Down the Coast by Daylight. Observation Car, Parlor Car Dining Car. First class tickets only.		
THE OWL	Lv. San Francisco	Ferry Station	6:20 p.m.
	Ar. Los Angeles		8:35 a.m.
	Buffet-Library Car, Standard Pullman, Observation Car, Dining Car. First class tickets only.		
THE LARK	Lv. San Francisco	Third St. Station	8:00 p.m.
	Ar. Los Angeles		9:45 a.m.
Dining Car.	Standard Pullman, Observation Car, First class tickets only.		
COASTER	Lv. San Francisco	Third St. Station	7:00 a.m.
	Ar. Los Angeles		10:30 p.m.
	Chair Cars, Smoking Car, Dining Car. All classes of tickets.		

FOUR ADDITIONAL TRAINS LEAVING SAN FRANCISCO DAILY WITH STANDARD PULLMAN AND DINING CARS. ALL CLASSES OF TICKETS.

Valley Express	Ferry Station	10:40 a.m.
Sunset Express	Third St. Station	4:00 p.m.
San Joaquin Valley Flyer	Ferry Station	4:40 p.m.
Los Angeles and San Francisco Passenger	Third St. Station	10:00 p.m.

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The Exposition Line—1915

San Francisco: Flood Bldg. Palace Hotel. Ferry Station. Phone Kearny 3160. Third and Townsend Streets Station. Phone Kearny 180.
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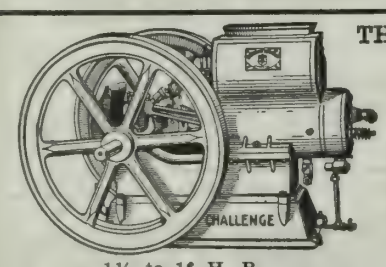

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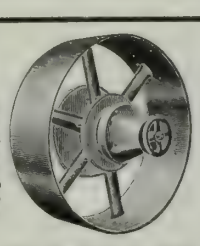
is recommended and guaranteed for its simplicity, efficiency and smooth running. Material and workmanship the finest that can be obtained. Weights, bore and stroke greater than any other engine. Catalog on request.



The Havana Double Grip Friction Clutch Pulley, best for your engine, because it is easiest to attach, adjust and operate, never slips, nothing to wear out.

1½ to 16 H. P.

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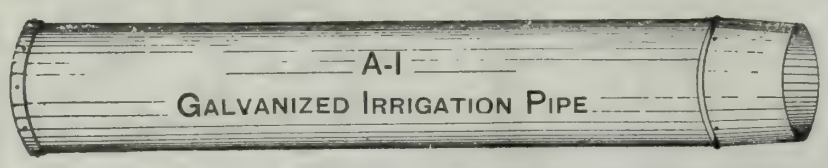
Manufacturers of Deep Well and Centrifugal Pumps.



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BECAUSE it is made with a lockseam set down under 3500 pound pressure, which requires no soldering to make it water tight (solder will break loose by jarring and hard knocks).
A-I Pipe was awarded first prize at Fresno and Santa Clara County Fairs in 1912.
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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 10. SAN FRANCISCO, SATURDAY, SEPTEMBER 6, 1913. Forty-Third Year.

CALIFORNIA STATE

Pruning the Prune and Almond.

[Written for the PACIFIC RURAL PRESS by LEONARD COATES of Morganhill.]

Since the publication in the RURAL PRESS of July 19 of an article on this subject, I have been able to get a photograph from a tree showing the fine clusters of large prunes well set on spurs close to the main branches. Eugene Norton is the owner, a man at once intelligent, observing, and unprejudiced. This tree, he says, was first pruned by his cow, but not being done neatly, Mr. Norton completed the work thus begun. The next year he found, by the extra opening up of the tree and the shortening-in of the branches, and, to some extent, of the laterals, the tree was well loaded with good fruit, borne close to the trunk and main branches. He then decided to extend the work along this line, although he fully realizes that to get a tree in perfect shape a regular system of pruning must be commenced while the trees are young.

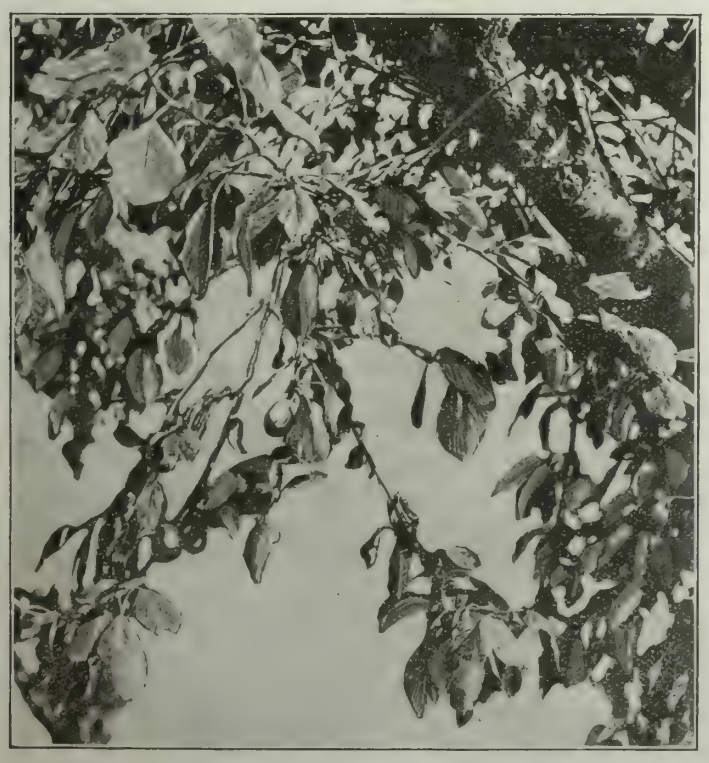
The other illustration is a typical example of the condition of most older trees, with long, pendant, almost lifeless laterals, bearing, if anything at all, mostly leaves.

There is nothing new in anything I have said. I have in a collection of 150 lantern slides that I had made abroad, some that are from photographs of old sculptures 3,000 or more years old, showing the ideas of some of our remote ancestors on pruning, grafting, etc. I have yet to hear of any horticulturist in Europe or the United States who does not preach and practice the general principle of an annual shortening in of the current season's growth of deciduous fruit trees, and particularly the laterals and fruit spurs. I still wonder why our poor little "French prune" should be the exception, and have not heard a single good reason given. The main (but not "good") reason is that the tree will bear earlier, and labor in pruning will be saved. Then why not so treat other fruit trees? There are hundreds of thousands of prune trees in California whose strength is wasted in keeping alive a mass of laterals, pendant, and up to four feet or more in length. To reiterate all this seems to me foolish.

Mr. Norton's Prune Bearing on Shortened Wood.

The same applies to the almond: it should be treated the same way. The accompanying illustration shows a seven-year-old almond tree, annually shortened, center opened, and laterals cut back to an inch or two of new growth every year. Note the clusters of almonds on these spurs directly on main limbs in the body of tree.

It is no "French" method, or "Coates" method, but the principle applied as it has been from time immemorial and among all nations. Neither does the kind of root change the habit of a variety: it merely accelerates or decreases vigor. Only in California have we "fallen from grace," become negligent, and do not like to admit it.



Long Pendant Growth Bearing No Fruit.

How the Almond Bears on Shortened Laterals.

In regard to the photograph of a prune tree taken in France, and reproduced in the RURAL PRESS of July 19, I did not, apparently, sufficiently emphasize the fact that it was taken on April 24, while the

(Continued on Page 220.)

Pacific Rural Press

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Sept. 2, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.06	.35	.23	72	46
Red Bluff	T	T	.04	104	56
Sacramento	.00	.01	.01	104	54
San Francisco	.01	.08	.01	74	52
San Jose	.08	.17	.04	92	52
Fresno	T	.33	.00	104	60
Independence	.01	1 81	.00	90	60
San Luis Obispo	.86	.92	.05	90	58
Los Angeles	T	T	.00	92	62
San Diego	.00	.08	.00	80	54

The Week.

August did this year her utmost for moisture by getting a big T into the San Francisco weather record and by throwing down water capable of measurement in distant parts of the State, both north and south. This fact has awakened the weather prophets to their seasonable activity, and we are already told that we shall have a hot and wet September and more coming later, which is surely a joyful anticipation—esecially in the "later" coming, for September rains are usually more harmful than desirable. It might seem that such prophecies would be troublesome to the seasonable activity of the rainmakers, but that is more apparent than real. All they have to do is to keep away from the credulous people whom they bunkoed out of their money last fall and go into new districts where there are other credulous folk who are ready to believe that they have already had two dry years because they did not make contracts with rainmakers and will be particularly ready now to insure themselves against a third affliction of the same kind. And so the prophets' activity does not in any way preclude the enjoyment of a good season by the fakers.

There is a certain amount of bravery among the prophets who declare for a hot and wet September, for we have an impression (without time to verify it by reference to the records) that a rainy September must be rather cool and that the prevalence of rain-clouds and precipitation means the exclusion of hot northers which delight to sweep over the State as soon as the decadence of the westerly ocean winds admits them. Of course, the increased atmospheric humidity produces sultriness which affects the human organism much more than it does the thermometer, and perhaps that is the reason why the prophets make the combination. However this may all be, the wise man will not pay much attention to prophecies, except as a noonday recreation, perhaps, but will push ahead the securing and storing of crops, and doing other early fall work just as zealously as he would if he knew that all the prophets and rainmakers were in the treetops ready to pour down buckets-full of water upon him. It is this kind of a man alone who can really enjoy prophets and fakers.

Corporation and Co-operation.

Our friends of the San Francisco Chronicle frequently rise to explain that there is no difference between an effective farmers' organization and a trust, and its latest discovery is that by changing two letters in the words we have written above, one becomes the other. We presume the orthographic argument is just as good as any other when one is arguing on form and ignoring substance. Suppose the principles of organization giving strength and the machinery of organization giving method are essentially the same, of what moment is that? None whatever, for it is the spirit and the purpose which determine the quality of action. St. Paul knew all about it when he said: "the letter killeth, but the spirit giveth liveth." We advise our friends, therefore, to think less about letters and more of the spirit or the purpose of things which are similar in principles and methods of organization. So great a moral philosopher as Colonel Roosevelt told us long ago that there were good and bad trusts, and it is an interesting coincidence that, in all European countries, governments and philanthropists do not hesitate to promote beneficent organization and punish malevolent organization, though both aim at essentially the same form of control. Their conception is that the spirit and purpose of organizations should determine the attitude of the public mind and action toward them. There is all the difference in the world between organizations which aim at the greatest good for the greatest number and at the greatest good for the least number, though their methods are similar, and in the nature of things must be similar. In Europe they do not hesitate to fight the devil with fire, and in fact, according to proverbial wisdom, there is no other way to get his goat; or, in more orthodox phrase, to get the goats away from him.

The New Viticultural Commission.

Upon another page will be found the names of those who constitute the new viticultural commission as provided for by the last session of the legislature. A glance at the names shows that the body is particularly rich in experience and expertness on the promotive and commercial sides of the industry. There are men who know the cultural side thoroughly also, but the body is apparently for effort in the line of making California investments in vineyard properties safer and more profitable. This is the effort which is most needed at present, for the industry is surrounded with unsolved commercial problems, as it has been from the very beginning. It seems to us wise for the State to initiate just this work, and from our knowledge of the men constituting the new commission we count them exceptionally well qualified for the work entrusted to them. They can, for instance, handle vigorously the serious issue which has arisen between viticultural interests East and West over the provisions of the proposed new tariff—an issue involving moral considerations as well as those commercial and agricultural. Such affairs and conditions have not been provided for in our public service during the last few years, and yet upon the satisfactory arrangement of just such affairs largely depends the fact as to whether we must go forward or backward in viticultural enterprises. This new commission should receive the hearty support and co-operation of those who have property in such enterprises.

Getting Ready for the People.

We are very glad to note that California residents of foreign birth are getting ready by organization to coach and care for the multitudes of their own nationalities who are coming to California soon by the Panama Canal and Exposition route. What we saw and heard abroad convinces us that great expectations of immigration from European countries are warranted. There are countries in Europe where our products have advertised our climates and capacities, and naturally people knowing products of the same kind take quick notice. We saw people who hardly knew or cared whether California was a part of the United States or vice versa, but they did know prunes and oranges and olives and had been saving money to go where such things grew so well as soon as lower transportation-cost allows them to land in such a country with something in their pockets. It is only humane that they shall be met and welcomed by those who have something deeper than a land-selling interest in them. What may be expected in the way of a good supply of Italians, Dr. David Rosio, a Waldensian preacher, recently said in this city: "The Italians are splendid farmers. If they could be diverted to the farms in the interior of this State, they would undoubtedly do well. They are used to raising the fruits and vegetables and manufacturing wines similar to those of California. But I fear there will not be enough farms throughout the State to take care of them all as fast as they come. During the last six months the Protestant Italian churches had devised a new method of taking care of their countrymen who come to this country. Three agents look after the immigrants before they leave Italy. When they arrive here they are assisted with special information and are guided to their destination, where they are met by a pastor of one of the Protestant churches."

This church which proposes to do such beneficent terrestrial work has already begun looking into local colony-schemes projected for Italians and apparently the promoters of man-traps will have to use finer Italian hands than the priests have to bag their game. It may occur to some that the immigrants might object to such priestly protection. We think not. European peasants do not object to sky-pilots as business advisers: in fact, they have learned to welcome and trust them, whether Romanist or otherwise. It is good sport to see a priest in action with a sharper who has one of his flock by the neck. It is as good a demonstration of practical Christianity as one is apt to find.

The French Have Another Way.

As might be expected, the French immigrant-aid movement is different from the Italian in its initiative with the laity rather than with the clergy, for the French do not have as much use for priests on week-days as the Italians do. The French movement seems to be starting in Oakland, where a number have organized the "Chambre de Commerce Francaise" with the idea of informing the citizens of France who are contemplating coming here upon the opening of the Panama canal. "We hope," said Dr. A. Demessant, president of the new organization, "to develop commercial relations with our countrymen in other parts of the world. Incidentally, it will be of great benefit to ourselves as well as them. It is our aim to supply those in our Fatherland a full and complete description of Alameda county as it really exists."

We hope California citizens of other distant birthplaces will take up efforts like those we have cited and get them into working order as soon as possible. It is not wholly an effort for the newcomer, nor wholly humanitarian. It is the best possible way to handle throngs of newcomers for our own sakes as well as theirs. It will largely prevent a flood of crime flowing from poverty and disappointment. The State should help such work, but it can be best done by patriotic Californians, each for his own kind, for they will know best how to rob rogues of their victims.

How to Handle Fruit.

All fruit-growers should read the report, upon another page, of the operations of the California Fruit Growers' Exchange for the current years. Two things about it seem particularly significant to us: first, that the growers' association could maintain its hold on the fruit when the crop was dropped to a little more than a third of the amount counted upon; second, that the relative cost of handling was held down so near to the cost of handling a full crop. Two conditions evidently threatened: the break-away of members to liberal bids from dealers, and the cost of maintaining the sales machinery eating more largely into the increased market price. The avoiding of these dangers manifests the strength of the organization and the success of its management. Of course, organization is valuable for just these things, but what group of producers would have seen and acted upon the fact as the citrus growers have done? Study carefully the report and see how significant it is with reference to the proper handling of other California products.

A Little Helpful Paternalism.

Franklin K. Lane, of California, United States Secretary of the Interior, is not afraid of a little paternalism if it is necessary to secure farmers' rights. We expected that of him, and are therefore pleased with his speech at the meeting of the Governors in Denver last week, in which he is credited with saying: "In my visits this summer through lands in process of reclamation, I found thousands of self-sacrificing men and women who are displaying as much heroism, fortitude, endurance and self-sacrifice as has ever been shown by soldiers in any part of the world on the field of battle. Far from railroads and amid many difficulties, they are building homes, and I was particularly touched by the many noble, suffering women on whose shoulders falls the main burden of the home. It is my conception that the main duty of the United States Government in its Land Department is to help the people to make homes, and if we can lighten their burden, the Government of the United States will suffer not at all."

After such a declaration of purposes, embodying the true Western point of view, we are ready to hear Mr. Lane say that the Government already had expended $80,000,000 in reclamation projects and should spend a like sum in the next ten years. We are waiting to see how that declaration will whistle down the narrow lanes of Eastern parsimony. Of course, the people who went on reclaimed lands in good faith should be helped through, and of course it will make the country all the bigger and richer in the end to do it.

Queries and Replies.

Querists must submit full names and addresses.

Triangular or Square?

To the Editor: I wish to call attention to saving of the per cent of space already handled to no profit in the space-wasting of square planting as compared to the equilateral triangular, which is nature's complete way to conserve all the space. This per cent of economy would be a mighty element of gain as applied to the nation's industries. Take it, if you please, to only the two items of corn and cotton, and we are swamped with the millions of gain. In many lines much less than 15% is a fair profit, and then to add, to be exact, 6.88% with the same cultivation and it is a wonder. I have planted trees and vines by the equilateral triangular form for years, and now, having retired, I cultivate, for exercise, a town lot, and for the simple economy of all the space I plant strawberries, corn, cabbage, indeed all planting, that way. Waste of space and effort is repulsive to all, and many do not, while but few do, know of this applying of nature's conserving of space. Some years back, in Fresno county, I gave, in the Selma Irrigator, a two-column article some startling comparisons, including two squares a column wide. One was filled with letters "o" or ciphers exactly half an inch apart and set square, while the other held the same sized type in equilateral triangles. The difference showed at a glance. To the many good reasons, I would add that when set to favor it, this triangular method lets the sun strike trees more favorably for the ripening of fruit.—F. J. Otis, Oakland.

There is a clear theoretical advantage in the equal spacing of plants which you suggest. Practically, however, the advantage is much less, because it has been determined that the roots of plants do not confine themselves to the space covered by the top growth, but reach out in all directions to a considerably greater distance than the breadth of the plant and therefore take possession of the land far more fully below ground than above. For this reason the plan of planting trees on equilateral triangles was formerly used more extensively than now; the tendency now being to return to the square system, which is simpler, and trusting the roots to take possession of all available space. Still, what you say about the advantage of the triangular method is true as related to trees, but would have a great deal less significance when applied to plants closely set and which are grown in straight rows more conveniently for cultivation and irrigation. The premise upon which your prescription is based, that there is now soil actually wasted by such planting, is doubtful; probably the plant roots take care that it does not exist.

Cherries and Rainfall Crops.

To the Editor: I have just purchased a small ranch at Petaluma where I intend raising poultry later. I have about two acres of cherry trees, said to be about 20 years old. They are in a very neglected condition and I am desirous of putting them in good shape for next year's crop. They are in a very light sandy loam soil which is easily worked. One point I particularly want to know is, how old must cherry trees be before they cease to bear fruit in quantity? Any information you could give me as to care and treatment would be highly appreciated.

I also have two acres of slightly rolling land which has been in grain hay. I would like to put this land into more profitable use. It is soil of the same character as the cherry orchard. What would you suggest doing with it. It is a little too high to irrigate economically.—B. M. G., Petaluma.

Cherry trees under good growing conditions and proper care are very long lived in California and bear abundant crops when thirty and more years of age. We do not know exactly how long they can be counted to be profitable. There are, however, cherry orchards in the San Jose district and elsewhere which are considerably older than the limit stated and are still very profitable. If your trees have been so neglected that the branches have died back, the trees should be pruned, of course, cutting out all dead wood and shortening weak or dying branches to a point where a good strong shoot can be found. Then a good application of farmyard manure during the rainy season, followed by summer cultivation for moisture retention would be desirable. Although the cherry is very hardy, it is quite likely to suffer on light soils which become too dry. On such soils as yours there is little if any danger of too much water in the winter, unless the land lies low, but the injury to the tree comes from the lack of moisture during the summer time, and this, with your abundant rainfall, you can probably assure by thorough summer cultivation.

On your grain land you could probably grow alfalfa to advantage if the soil is deep and loose, getting less, of course, than by irrigation, but still an amount that would be very helpful in your chicken business. Otherwise, as the land lies higher and perhaps out of sharp frosts, you could grow winter crops of vetches and peas and thus improve the land while furnishing you additional poultry pasture. The latter purpose could also be served by growing beets, cabbage or other hardy vegetables during the rainy season. This is prescribed because of the apprehension that the soil may not contain moisture enough for summer cropping without irrigation.

Walnuts from Seed.

To the Editor. There is a reliable nursery company selling seedling Franquette walnut trees on a positive guarantee that they will come true to type. Do you know of any orchards of this kind of trees in bearing, and if they are satisfactory?—C. L., Oakland.

Walnuts do come truer to the seed than almonds and other fruits and the Franquette has a good reputation for remembering its ancestry. Until recently practically all the commercial walnut product of California was grown on seedling trees. But these facts hardly justify one in trusting to seedlings in plantings now made. The way to get a walnut of the highest type is to take a bud or graft from a tree which is bearing that type. In spite of the fact that walnuts do behave better than other fruits, present planters should work for uniformity and the highest excellence by planting budded or grafted trees or by grafting-over seedlings afterward. And they should not only have best types, but should reproduce the best trees of those types.

A Giant Water-Cooler.

To the Editor: I want to put in a water system for my house, and would like to know if it would be feasible to build one of brick so that the seepage and evaporation would insure a supply of cold water. I was thinking of building one about 6 feet diameter by 5 feet high, laid in cement on a good foundation.—L. Campbell, Los Molinos.

There is, so far as we know, no physical obstacle in the way of building a water-cooling cistern involving the principles and conditions of cooling by evaporation as the olla of porous pottery does. It must, of course, be and remain porous enough to exude moisture for evaporation and must stand in the shade and in a current of air to make evaporation rapid. The more interesting question would be, not can it be successfully done, but has anyone done it and how? We cannot answer that; who can?

Planting Bush Fruits.

To the Editor: What would you advise as the best time to set out blackberries and loganberries also?—C., Arboga.

Any time after the soil is thoroughly wet down and you can get good, mature and dormant plants for transplanting. This may be as early as November and may continue until February in your region.

The Citrus Year.

The following is an interesting summary of the report of G. Harold Powell, General Manager of the California Fruit Growers Exchange, for the year ending August 31, 1913:

At the beginning of the year ending August 31, 1913, the California Fruit Growers Exchange shippers estimated that they would ship 34,000 carloads, or about 13,250,000 boxes of citrus fruits, comprising 27,000 carloads of oranges and grape fruit, and 7,000 carloads of lemons. This was the largest estimated shipment in the history of the Exchange. Detailed arrangements were made in the fall of 1912 to handle the increased crop.

In November and December severe desert winds reduced the crop at least 10 per cent; in January unprecedented cold weather destroyed the fruit in many sections, injured it severely in others, while in a few localities the crop escaped serious injury.

New Problems Through Frost.—The citrus industry faced one of the most difficult problems in its history as a result of the widespread damage caused by the frost. Immediately following, the growers and shippers were concerned over the condition of the remaining fruit as well as the stability of the industry. The markets were thrown into a chaotic condition by the exaggerated reports published throughout the country and by haphazard offerings of the speculative shippers. These experienced in the industry realized that the successful outcome as far as the remaining crop was concerned, depended upon the continuation of orderly, systematic distribution and marketing. The growers, realizing that the stability of the industry depended on preserv-in the marketing system of the Exchange unimpaired, stood shoulder to shoulder in meeting the condition. The organization readjusted its business operations without difficulty. Had the growers not been prepared to meet the condition with a thoroughly equipped distributing and marketing organization, the results which this report sets forth could not have been obtained.

Results of Wise Co-Operation.—As a result of the reduction of the crop by these causes, the Exchange shippers have sold only 12,443 carloads of fruit, 5,000,000 boxes in round numbers, or 37.7 per cent of the estimated shipments for the year. This amount represents 61½ per cent of the total citrus fruit shipment from the State during this period. It also represents the largest proportion of the total crop ever handled through the Exchange, the proportion having increased steadily from 47 per cent in 1905.

As a result of the shortage of the crop, the fruit sold through the Exchange will bring to California over $13,500,000, or an average return f.o.b. cars of $2.75 for every box shipped. This average is 50.2 per cent higher than the average f.o.b. returns per box for the preceding 8 years.

Almost No Red Ink.—Notwithstanding the difficulty of grading the fruit in frosted orchards, it is a significant fact that 99.66 per cent of the cars forwarded by Exhange shippers in 1912-13 brought a cash return to California. In other words, only one-third of one per cent, or one car in three hundred, of the cars shipped brought "red ink" returns. These few "red ink" returns were confined principally to the chaotic marketing period immediately following the frost, before the orderly distributing methods of the Exchange made themselves felt in the markets and before the invention of the water separator by Frank T. Chase made possible the accurate separation of the frosted from the unfrosted fruit. It is a still more significant fact in the face of the January disaster that 98.25 per cent of the cars shipped actually brought a cash return to the Exchange grower; that is, a cash return in excess of the average association, subexchange and California Fruit Growers Exchange cost, freight and all other charges. The records of the Exchange for the eight preceding years show that in a normal season a "red ink" sale is of rare occurrence. In 1909-10 for example there were two "red ink" sales in a total of 16,633 carloads of oranges; in 1910-11, there was one "red ink" sale in a total of 23,443 carloads of oranges. In 1911-12, 99.8 per cent of the oranges shipped brought a cash return to California.

What Co-Operation Costs.—The total cost of maintaining the California Fruit Growers Exchange for the year 1912-13 is 7⅛ cents per box for oranges and an average cost of 7⅓ cents per box for all citrus fruits. This selling cost is substantially 2 per cent on the gross sales and 2⅔ per cent on the returns f.o.b. California. The cost is 16 per cent less than the cost in 1911-12 based on the percentage of the gross sales.

These figures include the entire disbursements, without carrying over a single cent of liability chargeable to the business of 1912-13, or to any preceding year. They include the cost of maintaining all of the departments of the Exchange, the salaries of the agents, and all other expenses of the Exchange agencies, the collection of claims against railroad and transportation companies, the inspection of cars while in transit, the expense of the advertising campaign, the legal expenses necessary in safe-guarding the interests of the organization, the Exchange share of the expense of the Citrus Protective League and all other expenses connected with the business of the organization.

In addition to the California Fruit Growers Exchange, the associations maintain district exchanges which represent them in their dealings with the central organization. The cost of maintaining the district exchange should be added to determine the total cost of marketing for an Exchange grower. The average cost of maintaining the district exchanges is substantially 1 cent per box in a normal year; in 1912-13, notwithstanding the shortage in the crop, the average cost does not exceed 1-3/10 cents per box, making the total cost of maintaining both the California Fruit Growers Exchange and the district exchanges less than 2⅜ per cent on the gross sales, or 3.13 per cent on the returns f.o.b. California. This marketing cost, as far as known, is the lowest cost of marketing any agricultural crop in America. The cost of marketing all farm crops, including citrus fruits, seldom falls below 5 per cent on the gross sales. The cost of marketing citrus fruits, even where no comprehensive distributing and marketing system has been developed, rarely falls below 5 per cent on the f.o.b. value. It often costs 7 to 10 per cent. It costs the American farmer on the average probably not less than 10 per cent, it frequently costs him 25 per cent or more to market his crop.

Infinitesimal Losses.—The total losses sustained during the year from bad debts and from all other causes has been $390.71, or less than 1/333 of one per cent of the funds returned to California. The total loss from all sources since the dissolution of the California Fruit Agency in 1904 has been $5,731.21, or less than 1/200 of 1 per cent of $121,000,000, which is the approximate amount of money returned by the Exchange to California during that period. It is doubtful if this record in financial management can be surpassed by any other commercial institution in America.

Comparisons.—The shipments during the fiscal year 1912-13 represent 53 per cent of the shipments of 1911-12. The f.o.b. returns to California, on account of the shortage created by the frost, equal 79 per cent of the returns of 1911-12. The proceeds paid by the associations to the producers after deducting all packing and selling charges, though unequally distributed in localities on account of the frost, represent approximately 85 per cent of the proceeds returned by the associations to the Exchange producers in 1911-12.

The f.o.b. average price per box, as a result of crop shortage, is 47 per cent higher than the average for 1911-12 and 50.2 per cent higher than the average f.o.b. price received during the preceding eight years. Notwithstanding the reduction of over 60 per cent of the estimated shipments for 1912-13, the expenses of the California Fruit Growers Exchange have been readjusted so that the cost to the shipper is only ¾ of 1 cent per box higher than the cost in 1911-12. The percentage cost on the gross sales on the other hand, as already stated, is 16 per cent less than the cost in 1911-12, and 5½ per cent less than the average percentage cost of the preceding eight years.

PRUNING PRUNE AND ALMOND.

(Continued From Page 217.)

California "no pruned" tree was taken in July. The seasons in the valley of the Lot and in the Santa Clara valley are about the same, so that none of the new growth had started in the former, while the latter was in its verdant—but fruitless—prime.

[We count this one of the most important contributions made to our local horticultural literature for a long time. The subject has been in the minds of our fruit-growers for a generation, and the question frequently asked is, "What would be the effect of treating our French prunes and almonds as rationally as we do our apricots, peaches, and even our shipping plums?" There has never been any doubt heard by us that such a practice would secure better individual fruits and more vigorous trees. The doubt has been on the commercial side: "Would the almost appalling cost of pruning prunes and almonds be justified by enhanced value of the product?" So far as we know, no one has had the nerve to undertake demonstration of that fact, or else the result has not come to our knowledge. The most that is now usually done is to thin out the branches somewhat—usually not as thoroughly as it should be—and in that way get fewer but larger fruits and lessen the ills of overbearing. We are not at all sure that regular pruning of French prunes and almonds over large acreages as one might to advantage handle a few trees, though horticulturally sound, would be commercially profitable. That is the line, it seems to us, along which demonstration is desirable. The experience cited by Mr. Coates is an interesting step in that direction.—EDITOR.]

Other Suggestions by Mr. Coates.

In connection with the foregoing, but introducing other timely matters also, we add some suggestions which Mr. Coates made to Santa Clara valley growers through the San Jose Mercury:

There are several orchards in the valley that, at this writing, August 19, are actually bare of leaves, and many more in both hills and valley that soon will be. The treatment such should receive is a debatable question, but I offer the following suggestions:

These trees are in the winter or dormant condition several months too soon. To give them water now, if such were available, would merely cause the buds to swell and burst into leaf, a feeble, abnormal growth. An early soaking rain, even by the first of October, might do this; but that, if it happens, we have no means of preventing.

If the trees are now pruned thoroughly, the small bearing branches and spurs all being shortened in heavily, the strength of the tree will be conserved, and the small amount of sap now available will be sufficient to nourish the buds that are left. But I don't mean lopping with the hideous two-handed shears, or sawing out large branches; that is not pruning. Use a good pair of hand pruning shears—Reisser, or Briggs' Napa. I prefer the latter. They cost less and are homemade. Paint over cut surfaces or exposed wood with thick lead paint; use best white lead and oil, and darken with a little lampblack, but make it thick. Then whitewash the trees; spray the tops, but brush the trunks and main branches. This will prevent injury from sun during the next two months. But do it now!

Myrobolan on Coarse Soils.—There are some prune orchards in dry, gravelly land on myrobolan root; they can never be a success. In this case, and not to lose possibility of a few more crops, treat the trees the same, but even more vigorously, and next winter plant some other tree on almond or apricot root in the centers, with the idea of taking out the prunes on myrobolan in a few years. Done promptly and vigorously, I believe this would save the trees.

Irrigating Orchards.—The object is to supply needed moisture to the roots of the trees. The trees cannot obtain nourishment from the soil

without sufficient moisture to render plant food soluble. Natural moisture in the form of rain in California falls only in the winter season; therefore irrigation during the dry season is an unnatural process, liable to be injurious unless applied in conformity with natural conditions.

Some orchards are surface-irrigated on the check system during the summer, or at any time. One result is a condition of mud in some places and a few inches of wetting in others. The very wet spots do not get dry enough for cultivating until long after some other spots are hard and quite dry, and most of the moisture is lost by evaporation.

Another result is that the presence of so much surface moisture encourages the formation of small surface rootlets which die as soon as the moisture is withdrawn. This injures the vitality of the tree, and is not productive of any good. There are many orchards today long accustomed to this surface irrigation which are in far worse condition than those that have always been deeply cultivated and have had no irrigation.

This is not an argument against irrigation, but against the method by which water is often applied. It should not be necessary to even mention it. Observation by anyone of ordinary intelligence should be enough.

To quote from Professor E. W. Hilgard, who endeavored to impress upon California fruitgrowers many years ago the importance of proper irrigation, it was shown by him repeatedly that a subsoiler should always follow the plow in the irrigating furrow, that the moisture would get to the roots, and that there would be no soggy or subsequently hard-crusted surface left.

Shallow Irrigation.—The heavier the soil the more useless, or even injurious, is surface or shallow irrigation. In very sandy or gravelly soil it would make little difference whether water were applied at the surface or a foot beneath, but in this case fertilizers should be used much more than in heavy, rich soil. Near the Swiss Tyrol, where spring and summer rains are heavy and frequent, and where the soil was light, I saw women and children scattering bone meal in the furrows as opened with the plow by the husband and father.

The seasons for irrigating orchards in California in ordinary valley lands are, or should be, in the fall and in the late spring. After that, deep cultivation and plenty of it. You won't then disturb or antagonize the natural California conditions; simply fall into line, harmonize with them, and assist to the extent of the intelligence you use.

HOW MR. DUNIPACE PRUNES PRUNES.

To the Editor: In response to your request, I will endeavor to give my ideas on pruning prunes.

In the first place, I would call particular attention to the photographs of prune trees in the issue of July 19.

These trees are about the same age. Note the size of trunk and limbs of the California tree, indicating the far greater vigor of the specimen over the French tree, although the California trees are much closer together. This vigor in the California tree is the basis of my objection to the French method of pruning.

Heading Back to Be Determined by Vigor.—It is a point of observation with orchardists that the greater the growth of wood in a tree the slower the tree is in coming into bearing.

Having this point in mind, when starting a young orchard, it is often advisable not to head back the young trees the second winter; this to be determined entirely by the strength of the growth. In a vigorous tree, making a growth of, say, four feet in the first season after planting, I would advise leaving about two and a half feet of growth, and the second winter the trees may be allowed to go without heading back, thinning out the shoots to the required number of limbs, preferably four, well placed on the head. In trees of less sturdy growth, however, I consider it unwise to let them go full length the second winter. Having been shortened to about one-half of the growth the first winter, I should shorten again to about one-half.

There is an orchard in Paradise valley which was headed back until the fourth winter. The result, as might have been expected, was a lot of trees of great height and much brush, also very few prunes until about the seventh or eighth year.

The Older Trees.—In pruning the older trees, the two main points are: first, the admission of sufficient sunlight; second, the growth of new wood to supplant the old.

It cannot be that a tree full of weak, spindly laterals which are never shortened will prove satisfactory as a regular bearer. The wood which bears the fruit of the best quality is two, three, or four years old, according to conditions. To clip the new growth of a vigorous tree is to drive the tree to a bush of sprouts growing from the clipped wood.

Where, then, is the bearing wood going to be, making no mention of the work entailed in clipping all over a tree which is about twenty feet in height?

To secure the steady succession of wood, my idea is: a judicious thinning out of the old wood, coupled with the shortening of laterals of sufficient strength to be worth saving, taking out entirely those which have passed their usefulness, and keeping in mind always the admission of sufficient light, a very necessary assistant to the growth of new wood in the body of the tree and to the proper maturing of fruit.

Pruning Problems.—It is not to be wondered at that many orchards go without pruning at all, when the scarcity of skillful workmen is taken into consideration. I have seen many orchards terribly abused through the butchery of men who have the price of a pair of shears and who need a job. There are many Italian pruners (?) who secure work on the same principle which gets a Chinaman a job as cook.

As I have before asserted, my object in taking up this subject is not to set myself up as a judge of the methods of experienced men, but to reach out a helping hand to the struggling in a time of trouble. I have not attempted a lengthy treatise on pruning; the difference in soil conditions making the individual treatment quite varied. ERNEST A. DUNIPACE.

Morgan Hill.

[These are exceedingly important considerations. Let other readers go to the bat: the discussion is very timely and interesting.—EDITOR.]

TO PRUNE OR NOT TO PRUNE THE PRUNE.

To the Editor: Mr. Leonard Coates' article, "Pruning the Prune," in the issue of the RURAL PRESS of July 19, was read by me with interest. The heavy pruning of the prune as followed in France, if followed for profit alone, would not pay here in California. Heavy pruning means the lessening of fruit-bearing area, also a longer period of time taken by the tree to recuperate from extra loss of sap, shock, etc.; hence a poorer condition, smaller crop and smaller profit.

Prune lightly and save limbs of two inches and under which bother in cultivating near the trees, by making use of this method. About six inches above where the limb joins the trunk on the inside, saw out a V-shaped piece one-half inch wide and three-fourths way through the limb, then with a piece of rope draw the limb into the tree until the cut edges meet.

We realize more profit from the sale of big crops more times than we lose. Some of our best new kinds of fruit are secured from seedlings which never received heavy pruning, if any. In Sonoma county one season I saw the method of heavy pruning of prune trees tried out, and failure of looked for results followed. A good season followed this heavy pruning and a bumper crop of small prunes was the result. No thinning was practiced.

In pruning this French way, every tree receives a heavy pruning for its size and age, and the eye seems to have aided greatly in getting them very symmetrical. Now it would seem, when pruning is done for profit alone, that the pruner should have data of each tree, so he could prune the same way again, if past season's crop was best known for the orchard and had been secured by heavy advanced method of pruning.

How the pruner would proceed to prune a given orchard after a poor crop following a dry season would be a puzzle to many of us. In an average orchard quite a percentage of trees are shy bearers, then there are a few culls of little growth, and to prune these two classes of trees would result in time and money lost. The rest of the trees would be good bearers, with a few excellent ones, and these two groups will bear well without any pruning and keep up the average. Why prune heavily the good and excellent bearers, for you will only cause your trees to grow higher, the fruit year by year will grow higher in the tree and of lesser quantity, and sunburn will be seen to have been at work.

Again, take an ill-shaped tree, one with a weak side and a healthy side. Would it not be time ill spent to prune the healthy side back and to keep it in check until the weak side caught up, if the most profit was looked for that year from that tree? Surely big profits now is what the prune grower wants and works for. I will say that the non-pruned prune tree is ahead of the heavily pruned one in profits, so far as pruning alone is concerned, and the only way that the heavily pruned one will ever surpass it will be by the use of some other method along with heavy pruning which is not used with the non-pruned tree, for instance, the use of thinning or fertilization, and possibly spraying.

As humus leaves the orchard in good crops, try replacing it with fertilizer to the extent of what a heavy pruning costs and do not prune.

Napa. J. H. QUIEN.

FRUIT WEEK IN WASHINGTON, D. C.

To the Editor: An event of National importance to fruit and nut growers and the fruit and nut growing interests of this continent will occur in Washington, D. C., November 17th to 22d. On this occasion the American Pomological Society, The Society for Horticultural Science, the Eastern Fruit Growers Association and the Northern Nut Growers Association will meet as a unit event designated as Fruit Week.

The programs and business of the separate organizations will be conducted independently in the same building, while all exhibits will be displayed in common, though entries shall be made through the respective bodies, thus keeping the identity of each intact.

The material already promised for the several programs indicates an exceptionally interesting and valuable series of addresses and lectures both in text and illustration. Exhibits are assured from Cuba, Porto Rico, Hawii, the Philippines, Canada and all the leading fruit growing sections of the United States.

Ample cold storage space has been provided near the meeting place and persons contemplating making an exhibit of perishable fruits may forward material well wrapped and packed to the Washington Market Company, who will care for it at a very nominal charge. All packages should be plainly marked "for the American Pomological Society." Requirements for exhibit space should be filed before October 15th with the secretary of the American Pomological Society, who may be addressed at 2033 Park Road, Washington, D. C.

Exhibits of new or little known fruits or nuts are solicited from all parts of the continent. For meritorious new ones the American Pomological Society offers the Wilder Medal, the foremost honor awarded by American pomologists. Other pomological subjects of special merit are likewise eligible to entry for this honor. Application for entry for Wilder medals should be made to the secretary of the Society not less than ten days previous to the date of meeting.

As space for exhibits is limited early reservations should be made by those intending to display or compete. Exhibits of fruits and nuts will be confined to plates, trays and cartons.

CORRESPONDENT.

Washington. D. C.

DEPTH OF GRAIN ROOTS.

To the Editor: To what depth have grain roots been found to penetrate?—W. H. M., Manteca.

Prof. Hilgard says, in Agricultural Schools of the Pacific Slope, that "the roots of ordinary crops do not go down more than four feet in humid regions, but in arid regions they may go down twelve feet or more." Depth of penetration depends upon soil character, presence of moisture, etc., as well as the rooting-habit of the plant. We have at hand no records of extreme depth of grain roots as demonstrated by actual excavations.

Hints on California Beekeeping.

R. M. Spencer of Ventura county writes to Gleanings about labor-saving plans in large out-apiaries. Locality has much to do with the methods of handling bees, either on a large or small scale. Where I am located the winter problem is nothing compared with that of cold climates. Here a nucleus of three frames of brood and bees will winter in good shape provided they nave plenty of honey for stores. In the East the main problem in spring is to get the bees to build up in time for the flow; while here the main problem is not to let them build up too fast and swarm before the flow starts.

In this locality bees begin to breed about Jan. 15, and have a light honey-flow until about May 15, when the main flow starts. It is easy to see then that the breeding season is very long. This compels us to use a large hive. Ten frames is what I use, and tier them up three stories high, allowing the queen to breed in all three bodies of she desires. This long breeding season makes a race of bees such as Italians more suitable than any swarming races like Carniolans.

Our work here generally begins about Jan. 1, when we go to all the yards, close the entrances down to about two inches, and take up all dead colonies to prevent the combs becoming moth-eaten. About Feb. 20, we go over all the hives, remove supers and surplus honey, stacking the same up in the yard. During March we build up the weaker colonies by taking brood from the stronger ones.

We use a method of preventing robbing during this early spring work by going over the hives so fast that robbers cannot get a chance. Each man has his duty. Say a crew of five men were going through a yard of 250 colonies in a day. The first man's duty is to take off the lids. No. 2, smokes the bees. No. 3, glances into the hive, calls out the number of frames of brood; or, if a frame is wanted, he calls for it. No. 4, brings the frame and puts it in a vacant space and returns the empty to a box of combs which is always kept covered. No. 5, then replaces the cover and sees that it is secure from robbers.

By this method we go over the hives so fast that robbers do not stand a show. We sometimes see them trying to get under the lids, five hives or more behind where we are working. If they become bad we paint the cracks with fresh white paint, and they will not try to get in, as the bees will not alight on fresh paint. We also jump over to the other side of a yard after getting over one row, and this also throws them off their track.

We always aim not to keep too many bees in a yard, but yards close together. We figure that, if we have 2,000 colonies in four yards of 500 each, in case of disease we have to fight it in 500 colonies, while if we have eight yards of 250 each we have only 250 to look after. Again, in poor years 500 will not make a living, but 250 will. On the other hand, large yards cost less to operate, and produce large crops in good years. We try to locate all our yards in well-sheltered places away from winds.

There is no question in my mind but that in many cases queens have been condemned for poor qualities when the main cause was drifting of bees. In a large yard of several hundred colonies, those in the center of the yard will always be in poor condition while the outside colonies will be strong. I have often noticed this in my yards where the flow in spring began on oranges to the west. The west side of these yards would be very strong, while later on, when the flow from other sources began in the east, the colonies on the east side would build up quickly, while those on the west would become weaker. The way to prevent this is to keep the hives in groups, or by some well-marked location. About all the locations in California are now occupied except some that are back in the mountains where roads must be built in order to reach them. Many localities are already becoming overcrowded.

One of the main problems here is to secure labor to handle the bees. It is hard to get help who will go back into these canyons and live and handle the bees.

All our hives are three-story, and all the honey is sealed and thoroughly ripened before extracting. We use the usual methods of extracting, running the honey into tanks in order to clarify it.

We find the best uncapping-boxes for our use to be tubs with a one-inch opening at one side on the bottom. These are set over a trough, and the honey is allowed to drip into troughs and run into tanks. The advantage of these tubs is that we can use one today and let it drip clean until tomorrow, when we screw in the plug and haul the whole thing home, and melt the cappings there. All we need is a large supply of tubs to handle the cappings as fast as filled.

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Counties Share in Timber Sales in National Forests.

During the fiscal year just past, National Forest receipts totaled $2,500,000, of which about one-half was for timber. Contracts entered into for timber to be cut, either at once or in later years, aggregate $4,000,000. These figures surpass business done in any previous year by a good margin.

An interesting feature of the foregoing announcement by the Forest Service is the fact that 35% of the gross receipts, or between $800,000 and $900,000, will go to the benefit of the States in which the forests are situated, for their schools and roads. This is provided for by law. It is estimated that from this source the various States have drawn over $3,000,000 in all since 1906, when for the first time a part of the forest receipts was made available for State use in school and road improvement.

The application of these laws may be observed in the timber sale now advertised by the Forest Service in the Lolo National Forest of Montana. Eighty million feet of timber will be sold, the gross receipts amounting to approximately $125,000. Under existing laws 25% of this sum, or $30,000, will go to the counties in which the forest is situated, for schools and roads, and an additional 10%, or $12,500, will be expended for good roads, under the direction of the Secretary of Agriculture.

The volume of timber sales on national forests is shown by forest service records to fluctuate from year to year, according to general business conditions. The actual cut, however, has advanced.

Besides the income from timber, there are various other sources from which the forests derive substantial amounts each year. Grazing fees paid by cattle owners for their stock which feed on the forest ranges is the chief source other than timber. Again, what are called "special uses" in the forests furnish a steady income. Examples of these uses are power sites, cottages or summer hotels, and various business enterprises, all of which pay the Government a rental, which in most cases is merely nominal. The total, however, helps swell the gross receipts appreciably.

Appropriations for the administration and protection of national forests are made directly by Congress as a part of the agricultural appropriation. The receipts from the forests, after deducting the 25% for the States and 10% additional spent for State roads, are turned into the National Treasury. Last year about $1,500,000 more was spent on forests than was received from them. But with the opening of the vast timbered regions, now inaccessible to lumbermen or too far from markets to be commercially available, and the development of the water power and other natural resources on Government land, forest officials feel confident that the forests will not only become self-supporting before many years, but will in time furnish to the Government an annual income of no mean size. The officials point out also that much of the present expenditure is for permanent improvements, which in later years will call only for the expense of maintenance.

VERIFYING IMPORTATIONS.

Since January 1, 1911, the Department of Agriculture has been safeguarding the interests of breeders of purebred horses in the United States in such a manner that there is no longer any excuse for the purchase of a stallion or mare as an imported one which is not actually imported.

The foreign (including Canadian) certificates for horses of the various recognized breeds imported for breeding purposes are submitted by importers to the Bureau of Animal Industry. The pedigrees are verified from the studbooks, and the description of the animal on the pedigree certificate compared with that reported by the bureau's inspector at the port of entry. If descriptions and pedigrees check up properly, the pedigree certificates are stamped in red ink. This stamp carries the statement that a certificate has been issued by the Bureau of Animal Industry, the date of issue of such certificate, and the department's serial number for the particular breed. These bureau certificates give customs officers data on which animals are passed free of duty under the provisions of the tariff act.

Farmers and breeders are cautioned not to purchase or accept any stallion or mare claimed to have been imported since January 1, 1911, unless the foreign pedigree certificate for the animal offered for sale is stamped as above described. If the certificate does not bear this stamp, either the pedigree is not correct, or the description fails to agree with the animal, or the animal was not imported since January 1, 1911.

This same procedure is followed in the case of cattle, sheep, and hogs, although in some instances, notably in the case of sheep, a number of importers have preferred to pay the duty, which is comparatively small, rather than take the trouble to get certificates of pure breeding from the department.

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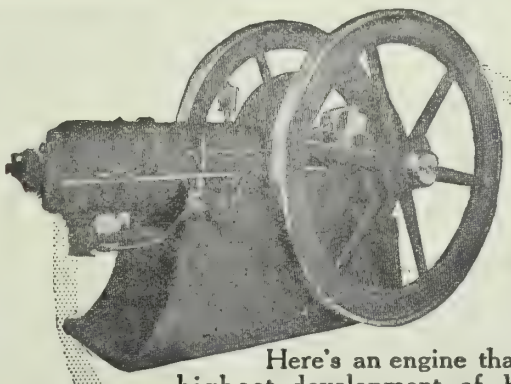

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The New Viticultural Commission.

The nine members of the new State Viticultural Commission created by the fortieth session of the legislature, to promote the grape and allied industries and in which 60,000 persons are engaged, have been appointed by Governor Johnson. They are as follows:

G. J. Wetmore, of Wetmore-Bowen Co., San Francisco, commissioner at large, a practical vineyardist and well known in the Livermore valley.

H. F. Stoll, San Francisco, secretary of the Grape Growers' Association of California, commissioner at large; one of the best posted and best acquainted grape men in the State.

Paul Masson, San Jose, commissioner at large, well known champagne maker, whose vineyard experience dates from boyhood days.

Sheridan Peterson Windsor, first (Sonoma) district, representing farming interests in the cultivation of the best types of grape vines.

Frank Swett, Martinez, second (Napa) district, recognized authority in matters viticultural.

Carl Bundschu, of the Gundlach-Bundschu company, San Francisco, third (San Francisco) district, who has devoted much time to the good of the industry.

S. Guasti, Los Angeles, president of the Italian Vineyard Co. of San Bernardino, fourth (Los Angeles) district, whose investment runs into the millions and whose vineyard is one of the show places of southern California.

J. E. Beach, Fair Oaks, fifth (Sacramento) district, a prominent vineyardist representing the element that produces the raw material.

Wylie Giffen, Fresno, sixth (San Joaquin) district, of the firm of Giffen-Hobbs company, one of the extensive handlers of raisins in Fresno county.

The commissioners serve without pay. Their first meeting is being held this week in Sacramento. It is believed that Edgar Sheehan, of Sacramento, will probably be chosen as secretary. Mr. Sheehan is well known throughout the Sacramento valley for his interest in the development of Sacramento industries.

OTHER ARRANGEMENTS.

Five of the nine Commissioners, under the law, are appointed for four-year terms and the remaining four for two-year terms. Those who serve but two years are to be chosen by lot. Seven thousand five hundred dollars is appropriated annually for the expenses of the Commission.

In order that the purpose of the act may be carried out more successfully, the State is divided into six districts, as follows:

First district—Sonoma, Marin, Lake, Mendocina, Humboldt, Del Norte, and Siskiyou counties.

Second district—Napa, Solano, and Contra Costa counties.

Third district—San Francisco, San Mateo, Alameda, Santa Clara, Santa Cruz, San Benito, and Monterey.

Fourth district—Los Angeles, Riverside, Orange, Ventura, Santa Barbara, San Luis Obispo, San Bernardino, San Diego, Imperial.

Fifth district—Sacramento valley counties.

Sixth district—San Joaquin valley counties.

PEACHES BY PARCELS POST.

Postmaster-General Burleson last week in Washington inaugurated the new regulations changing the parcel post rates and weight limit by mailing President Wilson a box of fine Georgia peaches. The box, which weighed seventeen pounds, with a postage charge of 13 cents, was delivered at the White House early in the day. With it came a note, in which the Postmaster-General said:

"This is an illustration of the opportunity which has been opened to the farmer, the horticulturist, the manufacturer and to every citizen of the country who will avail himself of this valuable adjunct of the postal service in the promotion of the commerce and happiness of our people."

The new regulation, which became effective August 15th, raises the maximum weight of parcel post packages from eleven to twenty pounds and makes certain changes in the rates. The local delivery rate of postage was reduced from 5 cents for the first pound and 1 cent for each additional pound or fraction thereof to 5 cents for the first pound and 1 cent for each additional two pounds or fraction thereof.

DOES A FLAT-RATE PARCELS POST PAY?

To the Editor: This afternoon I had a pleasant parcels post gossip over the teacups on the terrace of the House of Commons with the British Postmaster General.

He set at rest forever some of the oft-reiterated, but quite unfounded, assertions as to the British flat-rate parcel post not paying expenses. Both the domestic and foreign parcel posts are conducted at a profit.

It may be remembered that the rate for the former is 6 cents for the first pound, and 2 cents added for every additional pound, up to an 11-pound maximum. Although there are many Parcels Delivery Companies, who carry vast numbers of short-distance packages; and although 55 per cent of the gross receipts for those handled by railroads in conjunction with the Post Office is paid to the railroads, the business still yields a profit.

He also told me that notwithstanding the very low rates (3 pounds 24c, 7 pounds 48c, and 11 pounds 72c, for carrying foreign and colonial parcels as far as from Britain to Burma, Indo-China, etc.) even this class of mail showed a gain for the treasury, which, including the whole mail transactions of the Post Office for the last fiscal year, amounted to near $30,000,000.

No doubt so wideawake a business man as Mr. Burleson will soon find himself able, as I am sure he is willing, to put parcels post in the United States on a satisfactory basis, dispensing with the cumbrous, obsolete, and odious zone system, which is a constant source of vexation and annoyance.

EDWARD BERWICK,
President Postal Progress League of California.

London, 6th August, 1913.

ANOTHER UNEXTINGUISHED CAMPFIRE.

The District Office of the United States Forest Service reports that on August 15th Forest Guard N. E. Ross, on the Angeles National Forest, arrested S. W. Allman of Los Angeles for leaving a campfire unextinguished in Short Cut Canyon on the Angeles Forest. On August 16th Allman appeared before Justice of the Peace Glover, at Azusa, California, where he acknowledged his offense against the State law and was fined $50.

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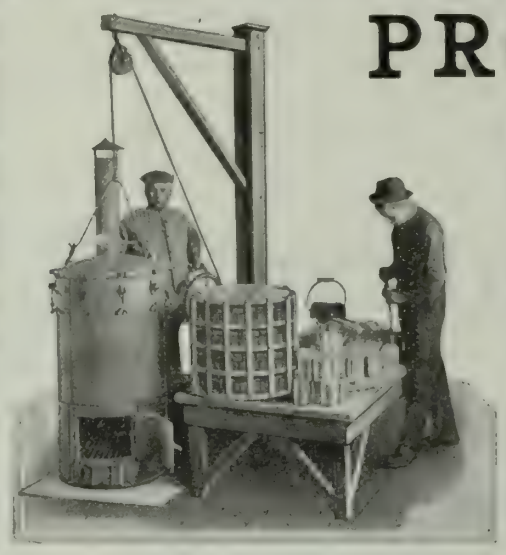

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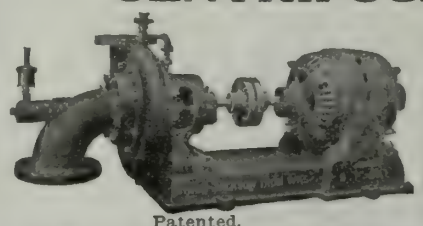

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Agricultural Co-operation in Europe.

[We shall take occasion as space permits to offer our readers facts about agricultural co-operation in European countries which were not traversed by our investigational airship and from which some empty cans and bottles fell into these columns in our "Out in the World" letters.—EDITOR.]

AGRICULTURAL CO-OPERATIVE SOCIETIES IN SWITZERLAND.

The central office of the Peasants' Union, which is the fulcrum of Swiss agricultural organization, has recently published the results of an inquiry into the working of the associations in the Confederation. In the March and April numbers of the Bulletin of Economic and Social Intelligence, published by the International Institution of Agriculture, there is a full report of this important inquiry which shows the great progress made by rural associations in the various cantons.

The inquiry was limited to ascertaining the number of associations in existence on January 1st., 1910, the number of their members, the dates of their foundation, and the extent of their economic action; dividing the associations into two groups, the first comprising those intended for objects of general utility, (agricultural societies, etc.), the second comprising those for objects especially economic, (syndicates, co-operative societies, etc.). To the first group belong 856 associations, comprising federations, with 266,876 members; among these are included 494 local agricultural societies with upwards of 60,000 members, 158 local societies for ornithology, poultry improvement and rabbit improvement (8,153 members), and 121 local beekeeping societies with 7,330 members. Besides these there are 30 cantonal agricultural societies, 11 for ornithology, 16 for beekeeping, etc.

The second group includes the various forces of associations for the economic benefit of their members; it embraces, besides the federations, 5,552 societies with 603,855 members. Amongst these, there are 557 agricultural syndicates properly so-called, with above 48,000 members, and 10 federations, 2,785 co-operative dairies with above 77,000 members and 14 federations, 1,263 livestock improvement syndicates with 42,000 members and 29 federations, 68 associations for tree and fruit culture, 50 associations for viticulture, 133 threshing societies, 53 distilleries, 39 mills and three co-operative bakeries, 68 associations for land improvement (restriping, and drainage) with 3,500 members. There are besides 227 alpine pasture associations, with above 7,000 members, 4 for forestry, 2 for the cultivation of tobacco, 2 for that of sugar-beet, and 6 for cultivation and sale of vegetables. Credit co-operation in Switzerland dates from only 20 years back, but is represented by 939 rural banks with 10,000 members, almost all belonging to the Swiss Union of Raiffeisen banks, besides 5 associations for loans to be employed in the purchase of cattle. Agricultural mutual insurance assumes in Switzerland a character which may be called compulsory and semi-official on account of the financial protection given it by the federal and cantonal authorities, hence it has not been considered in the inquiry, which is concerned only with voluntary and free associations. We should also mention 31 mutual societies for insurance of horses, and two for insurance against hail.

These various manifestations of social activity in agricultural Switzerland are connected together in the Peasants' Union, which numbers 26 sections with 144,377 members.

From this enquiry we learn that on January 1st., 1910, the Confederation had 6,231 agricultural local assoociations with 293,719 members, more than 95 cantonal, intercantonal and national associations, with 86,410 members, and finally 81 federations with 346,225 members. Taking into account also the Peasants' Union with its large number of members, we have a total of 6,408 associations with 870,731 members.

AGRICULTURAL ASSOCIATIONS IN BELGIUM.—The Department of Agriculture and Public Works has recently published the latest statistics of the agricultural associations, collected by means of an inquiry held in 1911. The Bulletin of Economic and Social Intelligence, (No. 4, April, 1913) published by the International Institute of Agriculture, has devoted to this subject a long article from which we extract some particulars, more especially those referring to the end of the year 1910. As in previous statistical tables, the societies are divided into five classes: (a) professional agricultural unions; (b) syndicates for the purchase of seeds, manures, fodder and agricultural machinery; (c) syndicates for the sale of milk, for making and selling butter and cheese; (d) societies for agricultural credit; (e) land credit societies.

Of these the most important is that of the professional unions, organized under the law of March 31st., 1898, with a view to studying and protecting the interests of the associated farmers. On December 31st., 1910, these unions numbered 1,775, divided into various groups, agricultural comices and leagues, housekeepers' clubs, beekeeping and poultry improvement societies, livestock improvement syndicates, etc.

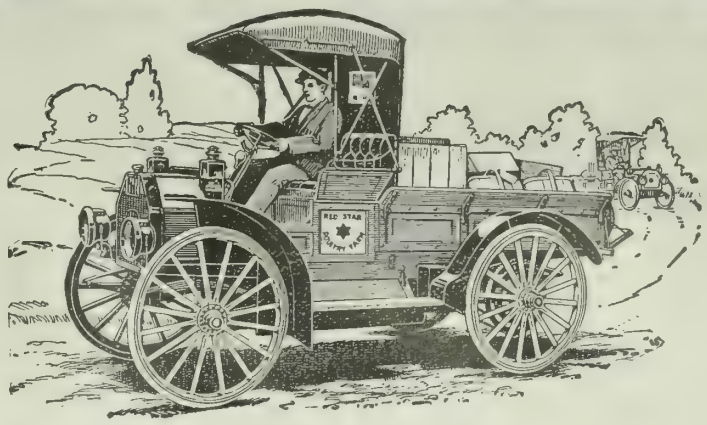
The comices represent the official organization of agriculture. Their working is regulated by a Royal Decree of October 18., 1889, in conformity with which they seek to promote agricultural progress by means of shows, exhibitions, and experimental farms. In the year above mentioned, they numbered 161, with 40,381 members.

Much more numerous were the agricultural leagues, of which there were 1,150, with 74,049 members. Of these leagues 765 were recognized as professional unions, which are agricultural associations extending their sphere of action to a market town, a commune, or even to several communes. They work chiefly to promote co-operation and mutuality; for the advantage of their members organizing among them sections for collective purchase, making provision for agricultural credit and for the insurance of produce, promoting the institution of livestock improvement syndicates, diffusing a knowledge of the principles of agricultural science, etc. Nearly all form part of a cantonal, provincial or national federation.

The housekeepers' clubs, introduced into Belgium in 1906, are increasing in importance. Their object is to form good mothers and skilful housekeepers, to attain which they institute small circulating libraries, prize competitions, exhibitions, and visits to model farms. They have rapidly extended, more especially under the auspices of the Catholic party, and at the end of 1910 they numbered 74 with 6,929 members.

Besides these, there are registered 196 societies for beekeeping, and 154 for poultry improvement, 502 livestock improvement syndicates, etc. There are 1,237 societies for the purchase of seeds, manures and cattle foods, and 658 societies for the sale of milk, butter and cheese.

The fourth class of institutions considered is that of agricultural credit societies which are of two kinds: the agricultural comptoirs, 16 in number, which act as intermediaries for the distribution of credit between the general savings-bank and individual agriculturists; and the rural banks of the Raiffeisen type, which at the end of 1910 were 5 in number.



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AGRICULTURAL REVIEW.

Almond Prices Set.

The California Almond Growers' Exchange at Sacramento fixed the prices last week for the 1913 crop as follows: Nonpareil, 19c; IXL, 18½c; Ne Plus Ultra, 17½c; Drakes, 14½c; all f.o.b. warehouses. In commenting upon the prices, the manager of the Exchange, T. C. Tucker, said that he believed that California almonds will materially advance after the first shipments are made, as the shortage in nuts is very large.

At a meeting of the Antioch Almond Association held nearly two weeks ago, the entire crop of its members was sold to Rosenberg Bros. of San Francisco. While the prices paid were not given out, it is estimated that the nuts sold will bring the growers about $15,000. Last season the Association sold about $27,000 worth of almonds, which means that when the higher price received this year is considered, that the crop this season was less than half that of a year ago.

The annual meeting of the California Almond Growers' Exchange to elect officers was held at Sacramento last week. The following directors and officers for the ensuing year were elected: G. W. Pierce, G. E. Lawrence, John Trembath, R. Lauppe, and E. A. Boynton. G. W. Pierce, president; G. E. Lawrence, vice-president, and J. B. Wrangham, secretary. The almond crop is now being harvested, and in the early sections has been completed.

With the Fruit Men.

At the meeting of the good roads people recently held in Eureka, Albert F. Etter brought several boxes of apples from his experimental grounds in the southern part of Humboldt county and had them made into apple pies to the joy of the delegates. Of the two varieties of apples Mr. Etter furnished, one of them, the Northfield, he considers the one that will solve the apple problem of that section. The Northfield is a variety practically unknown in this country, but after ten years trial Mr. Etter pronounces it as practically immune to scale, is ten days earlier than the Gravenstein, is much like the Jonathan, making it fine for the market. It is one of the 600 varieties that he has tested out, and he picks it as his best. Mr. Etter has reserved 2500 feet of space in the 1915 Exposition to show his berries and apples, and will use his hybrid columbine exclusively in decorations.

H. M. Barngrover, of San Jose, predicts that the present prune prices will hold and may go a little higher. He looks for big sizes for the most part, and with the large premium being paid for prunes from 40s to 70s the growers who irrigated the past season will have profitable results.

The J. K. Armsby company is reported as estimating the dried apricot crop for the State at 9,000 tons, of which 80% has been sold. The crop in the Pajaho valley will be in the neighborhood of 200 tons of dried apricots.

A Fresno exchange gives the following account of a new method of drying grapes which may mean much to the industry: "Raisins within eighteen hours after the grapes are picked from the vines have been made an actual fact by a process patented by O. Tajian and B. Kiremidjian, local Armenian residents. The process consists of a method of evaporation by means of hot and cold air, which leaves the raisins thoroughly cured. After the process the raisins have a more or less bleached appearance, but are darker and retain a more natural color than under the ordinary method of sulphuring. The principal claim of merit made for the process is that by its use raisins can be produced eighteen hours after the grapes have been picked, thus obviating the necessity of putting the grapes out to dry and running the risk of having the raisins wet by rain."

The grape crop of the State is now ripening, and from reports received from the various sections the crop will be short, but to help compensate for this loss, much better prices are anticipated over those of a year ago. Around Lodi the crop of Tokays has been damaged by dry as well as hot weather. Where irrigation was possible, the results are satisfactory. Both the wineries and the shippers are busy. Around Fresno the Malagas have been damaged about 25 per cent. Around Sacramento the shipping and wine grape season is on, and the crop will be fairly good, also in Sonoma and Napa counties wine grapes are reported good with better than usual prices being received.

The Baldwin-Puente walnut growers have organized an association which controls 3,000 acres of walnut trees. The district is rather new, being located a short distance east of Los Angeles, and most of the groves are just coming into bearing.

Horticultural Commissioner Cundiff of Riverside county reports the number of orange trees in his county as being 1,740,000; lemons, 235,381; peaches, 124,000; olives, 98,850; date palms, seedlings and imported, 144,000; apricots, 115,000. The numbers apply only to bearing orchards, with the exception of the date palms. Besides fruits, Riverside county has annually seeded to grain over 50,000 acres, as well as 18,500 acres in alfalfa and a good many thousand head of stock. The total assessed valuation of the county is given as $26,387,015.

A dispatch from Visalia states that the big 1912 prune crop raised on the Mineral King ranch near there, has been sold to the J. K. Armsby Co. for $135,000. The work of packing the prunes for market is to be started at once.

Compared with last year, fruit shipments have fallen off during the past two weeks, though the total shipments so far for the season are in excess of those of the same date last season. It is very probable that, owing to the shortage of the grape crop, the total deciduous shipments from California this year will not be as large as for 1912. Up to August 29th the total shipments for this season were 7,445 cars, as against 6,808 cars to the same time last year.

General Agriculture.

The tomato crop near Haywards is apparently running light this season. The vines seem to be light and the crop small where the vines were not irrigated, and the wilt is in evidence where the vines have had enough water. For a few days last week the price of tomatoes jumped from 40c to $2 per box on the Fresno market. Around Merced the crop has been marketed and was large, the growers getting good prices.

The rice crop in the Sacramento valley is good and the acreage is now sufficient

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We are in the market for a small lot of Toulouse geese. HILL & MacDOWELL, Angiola, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

WANTED—Burbank standard cactus leaves; highest prices paid. Address Sempervirens Cactus Farm, Santa Rosa, Cal.

Agricultural college graduate with countrywide practical experience in U. S. Dept. Agricultre, 5 years in Cal., wants opportunity to manage or develop fruit ranch, preferably on a profit-sharing basis. Address Box 10, Pacific Rural Press.

I am interested in 2000 acres of land, very rich soil tested by University of California, situated 32 miles from Mojave, land on S. P. R. R. and only 2 miles from railroad station. I want to get some party who has complete or part complete farming implements to take full charge of place, and will make suitable arrangements with proper party. The place has never been farmed and is in virgin condition. Only want small part cultivated. Write full particulars or call on Harry M. Lichtenstein, 24 Montgomery St., San Francisco.

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Fruit Trees, Berries and Small Fruits; acreage planting a specialty. Roses, Bulbs. Lists ready. H. A. HYDE, Watsonville Nurseryman.

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MISCELLANEOUS

AUSTRALIA
SPECIAL LAND SEEKER'S EXCURSION NEXT NOVEMBER to Victoria, Australia. Early reservation of berths desired. Reduced steamship passages and free rail travel for inspection. GOVERNMENT OF VICTORIA WANTS SETTLERS and offers unusual opportunities. Lands suitable to all requirements, exceptional terms. Free particulars from F. T. A. FRICKE, Government Representative (from Victoria), Box W, 687 Market St., San Francisco.

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ALFALFA HAY—We have about 100 tons of good second and third cutting for sale. Write for prices. C. W. VANNOTE, R. D. Box 49B, Gridley, Cal.

ALFALFA HAY—I have some No. 1 alfalfa, and it will pay you to write me for prices before buying. W. G. COPPERNOLL, Gridley, Cal., R. D. 1.

FOR SALE—175 tons choice alfalfa hay and 30 tons grain hay, delivered on cars at Delevan. Address Reynolds & Smith, Delevan, Cal.

AIR-SLACKED LIME—Reasonable prices on fertilizers. H. B. MATTHEWS, 733 Merchants' Exchange Bldg., San Francisco.

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to justify a mill to handle it. At Biggs there is talk of building an up-to-date mill if the citizens there will donate a building site. In that section thirty-five binders and three threshing outfits have been contracted for to handle the crop.

Last week County Horticultural Commissioner Bloomer let loose 1,000,000 lady bugs in the hopfields of Sacramento county to clean up the hop louse.

According to a report sent by B. B. Price of Hanford, the grain crop on 70,000 acres in the Tulare lake section will amount to 500,000 sacks this year. Of this grain 300,000 sacks are barley and 200,000 wheat. In that section there is also growing a large quantity of Egyptian corn.

The Tulare honey crop will be about five carloads this season. The season was poor for the bees owing to light rains last winter. Big rains in the mountains has resulted in raising the water in Kings river till now 4,000 cubic feet of water is measured. Alfalfa growers in the irrigation districts affected will have plenty of water to finish the season.

A dispatch from Dinuba states that the production of Turkish tobacco in that section will reach 600,000 pounds this season. There are 1,000 acres devoted to its production.

The hop harvest is now in full swing in Sonoma county. The crop is of excellent quality and brings good prices. Many people have gone there to help in the gathering and about $200,000 will be paid for picking.

Bean harvesting on the San Joaquin ranch in Orange county is now in progress. On the ranch this season are 17,000 acres of limas and 4,000 acres of blackeye beans. The bean crop of orange county is valued usually at over $1,000,000, but is below average this season owing to the dry season. The bean fields on the San Joaquin ranch are said to be the largest in the world.

At a meeting recently, the contract for widening the canal, cementing and building a double automatic gate below the tunnel, was let to T. K. Beard by the South San Joaquin Irrigation district. The new work ordered is to be completed by January 15, 1914, and is to cost $225,000. When the work is completed the directors of the enterprise believe they will have the model irrigation system of the State and will have plenty of water from the Tuolumne river for the whole acreage covered.

Miscellaneous.

The Upper Salinas Valley Fair will be held at Paso Robles October 1, 2, 3 and 4. San Luis Obispo county will show its finest and the prospects are for a better exhibit than last year.

The canneries at Upper Lake, Lake county, are putting out 48,000 cans of beans daily and employing 100 people. The farmers of Upper Lake want a creamery.

It is announced that E. C. Converse, of Chicago, will take charge of the Sacramento Valley Irrigation Project on September 1st. The company has a capital stock of $10,000,000 with a bonded indebtedness of $7,526,000.

The California Vegetable Union of Los Angeles, which for years was a factor in marketing the celery crop of Orange county, is to go out of business, leaving the field practically clear for the Pacific Vegetable Company.

The Sutter County Fair is to be held at Live Oak, September 5 to 7.

The fruit ranch of George Pease, in Sutter county, northwest of Yuba City, was sold last week for $16,000.

The Reclamation Service is ready to extend the Orland irrigation project by the building of a diverting canal 6½ miles long from Big Stony creek. The prime object is to increase storage for dry years and to secure water for 6,000 acres more land to be taken into the project. The cost of the new work is figured at $200,000.

A tract of 1,300 acres of land located near Livingston, held by the American Land & Produce Co., a Japanese corporation, is to be sold at public auction, September 8th, to satisfy debts.

The Roseneath Ranch at Arlington, Riverside county, is shipping 12,000 chicks per month. Most of the trade is with Arizona parties.

Eight thousand acres of the Oro Loma farms tract, southwest of Dos Palos, are being placed under irrigation.

With the completion of sixty miles of drainage canals on the west side of the upper San Joaquin, L. A. Nares has reclaimed approximately 75,000 acres of land. Of this vast tract, about 15,000 acres are to be subdivided and colonized at once.

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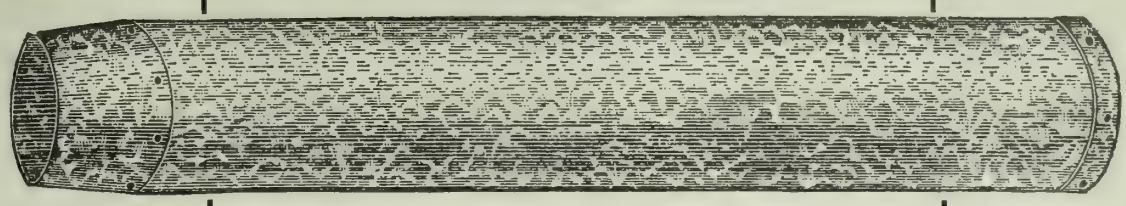

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WORLD'S GREAT EXPOSITION TWO-THIRDS COMPLETED.

At this time, one and one-half years before its formal opening day, February 20, 1915, the Panama-Pacific International Exposition is more than two-thirds completed. This estimate is based upon the total amount of work necessary in the complete preparation of the exposition. Every department of the exposition is pronounced by executives familiar with the organization of universal expositions to be further advanced than were those of any of the greatest expositions held in America at a similar pre-exposition period. Twenty-seven of the world's nations have accepted the invitation conveyed through the Department of State; this record is unprecedented at a time one year and one-half before the opening. Thirty-five States have selected sites for State pavilions. Almost seven thousand applications for concession privileges have been received. The applications for exhibit space would, if all were granted, exhaust the entire exhibit area.

Construction is far advanced. The most difficult part in exposition building is past. An immense amount of preparatory work has been accomplished. Ten of the fourteen huge exhibit places are now under construction. One building, the service building, is completed. Contracts for three additional buildings will be let within a short period.

All buildings are being built under time contracts with definite limits for their completion. A number of the most noted sculptors in America have advanced far in the preparation of the sculptural models to be reproduced upon the exposition grounds. Under the direction of Mr. A. Stirling Calder some of the most important models are being enlarged in the sculptural warehouses.

A phase of the exposition in which it will stand alone among all great expositions of America and Europe will be found in its representation of the South American republics. These nations will participate upon a great scale.

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More than 140 great congresses and conventions, many of them of international interest and importance, have voted to meet in San Francisco in 1915. This number will undoubtedly be greatly augmented. Many conventions will not take final action until 1914, owing to a usual custom to choose the annual meeting place but one year in advance of the time of meeting. To accommodate these great bodies, which will bring together many of the world's most brilliant minds, the exposition company voted $1,000,000 for an auditorium at the civic center. First work upon this building has started.

About 3500 men are now employed upon the exposition grounds. The esplanade, to lie before the main exhibit palaces, has been sown to grass, the freight ferry slip, at the eastern end of the esplanade is completed and work on the passenger ferry slip is under way; the yacht harbor at the opposite end of the esplanade is practically finished; a considerable portion of the grounds is under railway track and within a short period cargoes may be unloaded at the freight ferry slips and transported by rail to any part of the exposition grounds. The exposition company operates its own railway.

Why Stockmen Should Attend the Fair.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

A few days after the date of this issue, the State Fair, at Sacramento starts, and it is to be hoped that all of those interested in stock are planning on spending one or more days at the capital during that time.

If there is any one place where stockmen can get educational matter bottled up into a short period of time it is at the State Fair, and this is as it should be, for otherwise the State would have no just or good reason to contribute funds for its support.

As we have endeavored to show in past issues, the fairs are beneficial to breeders in many respects, and the same is true for the general stockman, who is not only interested in the premium awards, that he may know what stock in this State is considered the best by points of perfection, but also from the fact that he learns the methods others use in feeding and caring for their stock.

There are perhaps as many reasons that one should visit the fair as there are individuals who attend, for each person has his own views on the matter.

He who is interested in purebred stock, if only to the extent of a sire, should go because this is the Mecca for that class of exhibits and by exchanging ideas with other breeders one gets new viewpoints on the industry which are apt to greatly benefit him in the future.

A day or more spent asking questions among the breeders is sure to bring out new thoughts, and this too, from practical men who are going into the whys and wherefores of the business.

While it is true that there are other attractions at the fair than agricultural exhibits, these concessions are gradually being cut down to make room for the more substantial exhibitors and the attitude of everyone present is to make it a general meeting place for those who are interested in better farming conditions, and at the same time better financial returns.

There seems to be a feeling among fair visitors that they are not only there to gain information, but to impart it as well, and as a consequence a good democratic spirit prevails, such as cannot be found at any other gathering during the year.

It is due to this condition that farmers are about to be benefited by the fair, for even with all of the advanced ideas in machinery, the horse, cow, sheep or hog still enters into the working scheme of every agricultural enterprise.

Perhaps the horse is of interest to a larger number than any other one animal, for he is admired by all to some extent, and so we find that the horse exhibitors always attend in order to show the advantages of better breeding. In this respect the ordinary person is more interested in knowing what the results from better sires are, and for this reason grade horse classes are provided.

While everyone admires the beauty of the horse exhibits, it is in the judging that the real educational value is brought out. These judges are the most competent livestock men that can be secured, and in placing the awards they usually make comments on their selection, pointing out the defects or the good points as the case may be. They are also glad to answer any questions bearing upon their selection, and for this reason many good ideas may be formed of what characteristics a good horse should possess.

The standards used for judging are not based upon beauty so much as they are upon the requirements for serviceability, and this applies to all classes of livestock.

Other stock such as beef cattle, dairy cattle, sheep and swine hold out equally as much instruction as the horse division, and new features are being added each year to improve upon this part of the fair.

For instance, we now have the weekly milking contest, and many skeptical dairymen after watching the milk records of the cows entered, have gone home thoroughly convinced that the idea of well bred stock pays in more than simply beautifying the pasture lots.

In connection with the stock exhibits there are firms who demonstrate different feeds and equipment, as, for example, one firm last year had on exhibit stock which was being fed spineless cactus, while other firms had in working operation milking machines. We understand that this year a firm will have on exhibition a patent silo.

This class of exhibits are educational as they point out the economical reasons for advanced ideas and show why they are profitable.

It is such things as the above which count in the making of a successful show and not as some imagine, the number of brass bands or amusement concessions, although of course these help to add to the carnival spirit necessary in handling such large crowds.

Not long ago we were speaking with a gentleman who has not missed a State Fair in 40 years, and he informed us he considered his time and money had been very profitably spent.

Every year the conditions for attending the fair become easier for the farmer, and last season one found visitors arriving by boat, rail and auto.

The latter named way is becoming very popular, as the roads entering Sacramento from almost every direction are in first class shape and the trip offers an outing as well as instruction.

Visitors from other States tell us that we have a great livestock future, but before this can be realized we must have better stock and use better methods generally.

Granting that this is true, no better start can be made than by visiting the coming fair, and even if one is not quite ready to purchase purebred stock, he can get a clearer idea of what his requirements are and where to fill them than at any other place we know of.

BUTTER GOING WHITE?

To the Editor: I bought some butter and during the warm weather it melted. About 40 or 50 per cent was white, while the balance was yellow and went to the top. When the butter remelted, the yellow portion melted leaving the white portion retaining its shape. The white portion did not taste like ordinary butter. The butter made from our cows' cream melted at a higher temperature, but did not have a white portion. Why did our butter not act like the creamery butter?—W. H. Markley, Manteca.

Response by F. W. Andreason, Secretary State Dairy Bureau.

To the Editor: Referring to the letter written by W. H. Markley, and referred to this office, in regard to a certain sample of butter, I will say that it is not possible to state what foreign substance, if any, has been incorporated in it without making analysis of same.

If butter is melted in a glass receptacle, it will be found that the water, curd, and some of the salt will go to the bottom and the butter-fat will float on top. In merchantable butter, 80% at least should be pure butter-fat. Butter churned at a high temperature and accidentally overchurned usually has a great percentage of buttermilk in it—sometimes as much as 30%. But more than 85% of the buttermilk is water.

Samples of butter have occasionally been sent to this office that have turned white on the outside, and since the white part has a very desagreeable, tallowy flavor, people think that tallow or oleomargarine has been mixed with it, but we have never been able to find any foreign substance in any of the samples. We have found that some of the best brands of butter will turn white first on the outside and the white color will gradually go deeper if the butter is exposed to a current of air or if left in the sun a short time.

State Dairy Bureau, 25 California St., S. F.

In an experimental test track near Janesville, Wisconsin, an inspection just made showed that hemlock and tamarack ties put in the track without preservative treatment were decayed after 5½ years service. Those which had been treated were practically as good as when first laid.

COUNTY FAIR AT PLEASANTON.

With the decline of interest in horse racing on the Coast, directors of racetracks and fair grounds have deemed it advisable to bolster up the county fairs, and as a result we now find some of the most prominent racecourses sharing honors with agricultural exhibits.

The farmers have also taken a keener interest in this new procedure, and as a consequence we find such well known tracks as the one at Pleasanton being converted into a place where a visitor can obtain information along agricultural lines as well as about the breeding of standardbred horses.

Last year was the first time for a great many years that Alameda county has held a county fair, and the results were so satisfactory that it is expected to be a permanent thing from now on.

The fair grounds are owned by Mr. McKenzie, the well known racehorse man, who has leased the grounds to a fair association for ten years at a yearly rental of one dollar, providing only good buildings are erected. The last-named clause has proved to be a good one, as nearly $10,000 was spent last year in this way, and as a result the directors boast of having the finest buildings of any county or district fair in the State.

In making up the premium awards, the committee in charge have copied as closely as practicable those given at the State Fair, so that it is an easy matter for stockmen and others to make up their entries after the State Fair.

That this point is appreciated was shown by the number of exhibitors from outside counties last year, and we understand that the prospects are for an even larger list this year.

One feature greatly in favor of this as a fair site is its convenience to both the Western Pacific and Southern Pacific railroads, making it accessible to both the coast and valley counties by rail and also by auto for the roads leading into Pleasanton from either direction are usually in fine condition, and afford a very enjoyable auto trip.

With the increasing interest being manifested by city people in all lines of agriculture this fair is especially favored in location as it is right at the door of the State's metropolis.

Along with the educational features $6,000 in purses will be offered for the race meet, and as the race circuit this year is larger than usual, a good entertainment may be expected.

Mr. Dakin, Secretary of the Fair Association, is working hard to make this year's showing first class in every respect, and it is expected that everyone attending whether exhibitor or spectator, will consider the Alameda County Fair the most successful one of its kind in the State.—J. C. L.

WHEAT OR BARLEY FOR HOGS.

To the Editor: Which would be the better grain for me to buy for hog feed; wheat at $1.30 per hundred, or barley at $1? Would it be worth paying 10 cents a hundred for rolling, and then haul the grain eight miles by wagon? I would appreciate any advice on the feeding value of these grains when fed with buttermilk. —Subscriber, Lakeview, Oregon.

Wheat is only considered about 10 per cent more valuable as a hog feed than barley, so that in your case, barley at $1 is the cheaper. In Bulletin 80 of the Oregon Station it was found that crushed wheat was 29 per cent more efficient than the whole grain, and it is safe to say that barley will run about the same, enough so at any rate to pay the extra 10 cents a hundred for crushing and the hauling.

Buttermilk and skimmed milk are rated at the same valuation, and when fed at the rate of three pounds of milk to one pound of grain are considered worth about 40 cents a hundred.

Naturally this depends upon the base value of your grain and to the ages of the pigs. The usual price paid creameries is we believe about 25 cents a hundred, but experiments where one pound of grain to three pounds of milk were used indicate that it is worth more.—J. C. L.

Twenty-two States, including Hawaii, now employ State Foresters.

Hog Raising at Agnews Asylum.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

One noticeable feature of most every State institution is that where stock is being kept at all, it is usually good and the methods of handling are better than those on most ranches.

An instance of this may be seen by visiting the Agnews State Insane Asylum at Agnews. The methods used in the swine department are the most interesting as the returns are large and the expense very small.

In the first place the management here long ago decided that the well bred hog would produce more pork on a given amount of feedstuffs than the scrub, and as a consequence well bred, and in some instances, purebred sows were used and purebred sires have always been used. The result of good breeding stands out so prominently on this place that anyone who still has doubts as to the value of well bred stock would do well to see them for his own good.

Berkshire blood predominates in this herd, there usually being about 175 head. Having such a large selection, and by using good judgement in selection, the entire bunch stands out prominently as good individuals and it is impossible to pick out the sows who carry registration papers from the so-called grades.

Having good stock, the institution is equally as fortunate in having a cheap ration, the slops and other wastes being about the only feed used. As there are 1100 patients at the asylum, the waste product makes an enormous quantity of valuable feed each day, and so far it has never been the cause of any disease among the herd.

The only time when any other feed is used is sometimes during the winter months, but we were told that it was only necessary to buy a few sacks of shorts at that time.

The most interesting feature of the swine department is the convenient manner in which the hog houses and pens have been built and these are an improvement over anything we have yet seen in this State.

The quarters for the brood sows are provided for in a long building divided into pens of sufficient size for one brood sow and her litter. The building is perhaps 30 feet wide divided into three sections, one for a runway, one for feeding and one for the sleeping quarters.

The runway is on the outside edge of the building, but under the same roof, and is only used to provide shelter for the feeder.

The first enclosure adjoining this alleyway is used for the feeding pen having a drained concrete floor and a concrete water trough for drinking or wallow purposes. By having the cement, the slops are fed right on the floor and after feeding it, it is thoroughly hosed off, the refuse water running into the gutter and on out in drain pipes to the fields. A board partition about four feet high separates this feeding pen from the sleeping quarter, a sliding door being used to divide them. The last named has a wooden floor instead of a cement one, and during farrowing season is covered with straw, making it ideal for the successful raising of large litters. A door leads from this into outside pens where the stock can get exercise and sunlight.

These are all under one gable roof and by being arranged as above described furnished good dry, warm quarters during the winter and cool quarters during the summer.

After weaning, the pigs are taken to the outside lots, which run parallel to the brood house. These lots have a low shed roof shelter located at one end, which is of sufficient size to accommodate 40 or 50 pigs. A cement wall six inches thick separates this enclosure from the feeding pens and these latter named have been built with the view of providing as sanitary a feeding place as possible.

The cement wall above mentioned encloses the entire space and is about three and a half feet high and has two gates, one leading into the hog lot and one into the front driveway.

The floor is made of concrete with a gradual slope to the back end where a rounding gutter is made to supply drainage. The slops are thrown onto this floor with buckets from a wagon before the hogs are allowed in, and after feeding, the entire floor is hosed off with water, making it absolutely clean.

Running water is provided by having a cement trough run almost the entire length on one side with a hole at the bottom to enable draining, which is done every day.

The wallow is also built in this enclosure being made of concrete, but instead of being set into the ground, it is on top of the floor having cement sides and ends which are about six inches thick and eight inches high. It is built about three feet wide and seven feet long, inside measurements, and provides a good sanitary and easily cleaned wallow.

Owing to the large amount of stock carried on this place it is necessary to have a good many of these lots and feeding enclosures so that each size pig may be kept by itself. This is a very good practice as it has been found that hogs of one size in a pen gain much faster than when they are of mixed ages.

While close confinement is all right for fattening purposes, brood sows should have more chance to exercise and this has been provided for by having a field of several acres adjoining their quarters where they can exercise.

Most of the labor necessary for the hog lots is done by the inmates, the foreman being the only labor expense and we were told that last year the net returns from the hog lot were between $3,000 and $4,000.

Very little pork is sold, as most of it is consumed on the place making a large saving in the meat bill annually.

In concluding it might be pointed out that the cause of so little disease is most likely due to the sanitary equipment as most feeders who use a slop ration exclusively have more or less sickness.

FEEDING THE FAMILY COW.

To the Editor: With baled alfalfa at $16.50, and alfalfa meal at $24, and a 15 per cent waste in the hay—will it pay me better or as well to use the meal exclusively in place of hay? I keep one cow which receives 3 pounds barley and 4 pounds bran twice a day. It will be easier to store. Are the results the same? Is this ever done? Supposing there is rain, and I can raise vetch in the orchard; will it be sufficient to feed this with the meal in place of alfalfa hay? I feed 1000 pounds of alfalfa a month—would I feed more or less of the meal for the same results? Looks like it would be less. This problem has come up among several of us orchard farmers, and we would be glad to have your valued opinion as soon as possible.—V. C., Orangevale.

With alfalfa hay and alfalfa meal prices anywhere at all, it would not pay to substitute the meal for the hay entirely, as a cow needs a lot of roughage to give the body to the ration, to give her something to make a cud out of. Probably nothing would upset a cow quicker than to feed her all concentrates of any sort and give her no grass, hay, or other roughage. On the other hand some concentrated or easily digested feed, the meal being easier digested than the hay, often makes it well to feed a few pounds. Therefore, as far as the question of hay vs. meal is concerned, make the bulk of the ration hay and give a few pounds of meal per day as a delicacy, unless you have other concentrates to feed, as you seem to have. Vetch can be substituted for alfalfa hay as a cow feed if other concentrates are fed and alfalfa meal could be one of these. We would, however, be rather disinclined to take the vetch from the orchard and unless the soil was pretty well supplied with humus or you had lots of manure, would sooner raise hay elsewhere and plow the vetch under in the spring. Still, if you had a fair amount of humus in the soil, the roots of the vetch plus the manure might be enough for the orchard, and it might be possible to cut and feed your winter's growth.

So much for your questions—now for a suggestion or two. Your plan of feeding bran with alfalfa hay is hardly the best, for while bran is an excellent cow feed, it is so much like alfalfa in composition and effect that some other concentrate would be better. Barley is all right. Dried beet pulp would be one of the best feeds with alfalfa hay and some feed prepared with molasses would be tasty and excellent in effect. If you could raise some corn to feed green, it also would be one of the best things possible. These family cows that people ask about, by the way, must all be wonderful producers, or their owners would not feed them so high; the ordinary dairy cow seldom sees half the milled feed that the family cows get.

ALFALFA AS A BASE.

The following communication is one which we have received from C. G. McFarland of the Willowood Jersey Farm, of Tulare in answer to a query as to what he considers the best balanced ration with alfalfa as a base?

Can it be used more profitably than by feeding alfalfa alone, and what difference in net returns would be per cow of one feed over the other?

Information of this kind is always valuable as it gives in a concise manner the results of practical experience.

As Mr. McFarland has used a silo for several years, he is in a position to know how valuable they are, and stated to the writer last spring that he considered the silo a necessity on every good dairy where corn could be grown:

To the Editor: As a ration for milk cows I consider that alfalfa comes the nearest to being a balanced ration of anything that we Californians produce, but it falls far short of being an evenly balanced ration.

Any dairyman who has a cow that will produce one and a half pounds of fat a day can afford to feed from two to six pounds of ground grain a day per cow.

I have found the following the most profitable ration to feed. All of the alfalfa hay that a cow will eat, not waste, from 30 to 40 pounds of mature corn ensilage, and from two to six pounds of grain daily. I consider that corn ensilage can be produced a great deal cheaper than alfalfa hay with poor cows there would be little difference, but we presume that dairymen who feed in this manner have good stock.

My experience is that the above ration will yield in profit 25 per cent more than straight alfalfa.

ANALYSES OF INSECTICIDES FOR USERS.

George P. Gray, of the University at Berkeley, has just issued a circular stating that the California Insecticide Law provides that "the . . . Directory of the agricultural experiment station of the University of California shall, upon the receipt of a sample of insecticide, accompanied with a nominal fee of one dollar furnish to the user of said commercial insecticide such examination or analysis of the sample as will substantially establish the conformity or non-conformity of the said insecticide to the guarantee under which it is sold."

This nominal fee of one dollar does not nearly cover the actual cost of analysis in most cases, but is required largely as a guarantee of good faith and to prevent indiscriminate sending of samples. It seems a wise provision of the law and if properly used by the growers throughout the State would materially aid them in obtaining reliable materials for combating their insect enemies, as well as in aiding the officials charged with the enforcement of the law, in detecting fraudulent materials on the market.

The laboratory will not usually make a complete analysis of a sample, only such "examination or analysis as will substantially establish the conformity or non-conformity of the said insecticide to the guarantee under which it is sold." Analysis will be made for dealers.

Those desiring to avail themselves of this public service should secure full instructions about taking and sending samples, etc. by addressing, Insecticide Laboratories, University of California, Berkeley, Cal.

Light burning of underbrush to remove forest litter had been practiced in India, with the idea that it improves conditions for teak growing. Now after long investigations, forest officials there say that the fires are harmful, that full fire protection must be extended everywhere, and that to be really effective this protection must be continuous.

Production of Farm Power.

The California farmer is still much in doubt as to the exact type of horse or mule which is best suited to the varying demands of the farm. This condition, as well as a shortage of well-bred horses has led to a good deal of investigation in other States.

Milton Jarnagin, of the Tennessee Agricultural College, at a farmers' convention, gave the following facts relative to conditions in that State, which are practical in California.

It is a perplexing problem as to whether or not farmers should direct their energies toward the production of horses or mules. On the other hand, it is contended that there are not sufficient big, strong-boned, roomy, sound mares in the State at the present time to produce an adequate supply of mules that will command the highest price on the market, so that the first effort should be directed at getting bigger mares on the farms. This can best be accomplished by the introduction of desirable big draft stallions.

The best of the native trotting-bred mares, weighing from 1100 pounds up, will be ideal for breeding to these horses. A stallion standing not less that sixteen hands three inches high and weighing not less than 1700 pounds should be used. It is reasonable to expect that the fillies from this mating will be from 200 to 300 pounds heavier than their dams, depending on the character and amount of feed they receive as youngsters. The first cross will make excellent mule mares, though it would be better to superimpose another cross of draft blood before the mule breeding was undertaken.

For the past five years the Mississippi Experiment Station has been conducting valuable breeding experiments along this line. They have used Percherons, Clydesdales, Hackneys, standardbred and thoroughbred mares. They have bred them to the best Spanish and Mammoth jacks. The selling price at maturity has been the measure of the value of the animal. Without exception the heavier the dam the more farmers have been willing to pay for the progeny.

For those who are not willing to take the longer course of breeding the light native mares into heavier stock by the continued use, generation after generation, of draft stallions, it is a feasible plan for them to go to draft horse breeding centers and purchase foundation stock. On the other hand, the beginner's pathway is beset with many pitfalls. We are all human, and some of the horse dealers are even a little more than human.

One of the most common mistakes is for the farmer to go into the cities and purchase foot-sore, discarded city mares. The fact that they have gone unsound is proof of the fact that they are not fit to be used for breeding purposes. Above all things it has been the history of these mares that fully 75 per cent of them prove to be shy-breeders or non-breeders when they are sent back to the country. If sound mares are purchased in the market places many non-breeders are secured in this way. A good breeding mare is such valuable property that she will be kept in the country, so that if a desirable big mare above six years old is found in the market the presumption is that she is an unsatisfactory breeder or she would have been retained in the country.

The safest and most economical plan to follow is to purchase untried two and three-year-old fillies. The owner knows no more of their future usefulness as breeders than the prospective buyer, and he has at least an equal chance with the seller of getting satisfactory breeding mares. These fillies can be purchased at from $25 to $50 less than the mature mares and will become accustomed to the southern climate more readily than the older individuals.

Fifteen hundred pounds should be the minimum weight for farm mares, and there is practically no limit to the maximum weight so long as quality, finish and courage are maintained. No one will attempt to argue that a small man is capable of doing a greater amount of heavy work than a well-proportioned, active, big man. But the idea seems to have gained prevalent acceptance that because a horse is big he is inferior. I have seen thick-hided, coarse-haired, long-backed, gangling, angular, heavy horses that would not suit hilly land or a hot climate, but these are mongrels or misfits that would not suit any climate. The drafters with good hair, bold eyes, active well-carried ears, deep ribbing, short backs, and straight, sound underpinning will prove the most profitable and most economical of all farm power.

That we can produce a high standard of draft horses has been amply demonstrated. A 1550-pound grade Percheron mare owned by a college farm did as much work in the field as any mule during the past year. She was laid out of work seven days before foaling. The colt weighed 735 pounds the day before it was six months old and sold for $162.50. We produced a draft colt that weighed even 900 pounds at eight months and nineteen days of age. We have made it a practice to break all draft colts the fall they are two years old. Three of them will do the work of two mature horses during the first fall. As three-year-olds they are put back into two-horse teams and make most satisfactory farm workers.

With the increased weight the abundant feeding must necessarily follow. For best results it will be necessary to feed about one and a quarter pounds of grain per 100 pounds of live weight in the colts, together with all the hay they will consume during the winter months. Unless the pasture is exceptionally good it will pay well to feed a limited amount of grain to the growing colts during the grazing season. This may strike some as extravagant, though the object of this more liberal feeding is to develop the horse so as to put him in the collar or on the market a year sooner and thus cut off the ration of maintenance. That more liberal feeding can be practiced is amply demonstrated by the fact that during the last census year, Tennesee farmers sold $3,141,000 worth more feed than they purchased. If this amount of feed had been fed through well-bred horses it would have been worth double the amount to the farmers.

HEIFERS AND BULLS FROM A. R. O. REGISTERED HOLSTEINS.

Breeding superior in milk and fat productions.

Animals well grown and health guaranteed.

Visitors welcome.

LINWOOD FARM
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HOWARD CATTLE CO.

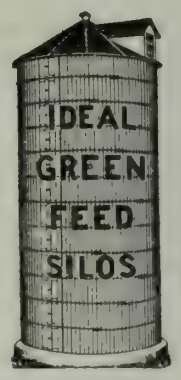
Breeders and Importers
SHROPSHIRE SHEEP
SHORTHORN CATTLE
BERKSHIRE HOGS
326 Sharon Bldg., San Francisco.

Duroc Jerseys

My herd won Duroc Jersey Association's Special Prize at 1912 State Fair. Will have some fine young stock, both sexes, at the Fair this year. Be sure to see them before buying.

ED. E. JOHNSON, Turlock, Cal.

Notice, Dairymen



Satisfy yourself of the merits of the **Ideal Green Feed Silo** by seeing our 14x30 silo set up complete at the California State Fair to be held at Sacramento, Sept. 13 to 20.

Why experiment when you can buy a silo built by a concern *that knows* how?

We will also show Ensilage Cutter in operation, along with our new up-to-date Alpha Gasoline Engines. Also the popular De Laval Cream Separator and James Barn Equipment. Get catalog describing any of the above.

Our exhibit at the State Fair will be located just to the right of the main carriage entrance.

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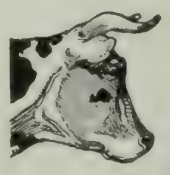

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Let us know what you want and we will make plans to fit your requirements free of charge.

An up-to-date dairy barn with proper, sanitary care of your stock, means bigger profits.

When You Visit the
CALIFORNIA STATE FAIR AT SACRAMENTO
September 13th to 20 (inclusive)—See

LOUDEN'S Steel Stalls and Stanchions

In Actual Practical Use in the Sharpless Separator Exhibit
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HOLSTEIN-FRIESIAN BULLS

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Two of our herd bulls are from 28,000-lb. dams with butter records of 1085 and 1142 lbs. We have fifty cows on yearly test. The first eight junior 2-year-old heifers to finish average 471 lbs. fat (588 lbs. butter, 80% basis). Ten cows have finished, including two 3-year-olds and three 4-year-olds, with an average over 700 lbs. fat (875 lbs. butter). Fifteen cows have averaged 651 lbs. fat (813 lbs. butter). Estimate the value of a bull in your herd backed by such production. Place your order now, as they are going fast. Write for information and prices.

A. W. MORRIS & SONS, Woodland, Cal.

SWINE.

REGISTERED DUROC JERSEY SWINE Some extra good young boars for sale, ready for service. Best Eastern strains. Ed E Johnson, Turlock, Cal.

REGISTERED BERKSHIRE SWINE—Best Eastern strains; bred sows and spring pigs for sale. A. B. Humphrey, Mayhews, Sacramento Co., Cal.

REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

350 BIG TYPE MULEFOOT HOGS for sale; they are the best for the Pacific Coast. John Dunlap, Williamsport, Ohio.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

EUCALYPTUS STOCK FARM—Registered Duroc Swine and Holsteins; prices right. J. K. Fraser, Denair, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroghbred Berkshires.

REG. POLAND-CHINAS. Fine young stock. C. R. Hanna, R. D., Riverside.

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CHAS. GOODMAN, breeder of High-Class Berkshire Swine. Williams, Cal.

E C. RAND—Registered Berkshires. R. 3, Box 69, Santa Rosa, Cal.

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DAIRY CATTLE.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

FOR SALE—Two pure-bred Jersey bulls (unregistered); one dark fawn, the other light fawn colored. Price $50 each. C. Booth, Alamo, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CHAS. L. LEONARD, Jacinto, Glenn Co.—Registered Jersey service bulls, sired by Gerties Lad, Gerties Son, and Melias Fox, for sale.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

MINOR & THORNTON, Breeders of Reg. Holstein-Friesian cattle. Kearney Park P. O., Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

REGISTERED HOLSTEIN bull calves for sale. H. W. Hawkinson, Perris, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

With the Livestock Men.

The annual run of sugar beet factory, at Salinas, starts this week, and as a result cattle men will soon begin fattening operations. It is said that this year's crop is larger than that of last year, and as a consequence feeders have bought considerable Mexican stuff to carry through the beet pulp season.

Dr. Walker, of the Bureau of Animal Industry, states that on a trip of inspection through Kings county last week he found the health of livestock in general to be very good, and that from now on the sheep scabies work will be in the nature of prevention rather than of curing.

Large shipments of cattle are being made from Klamath Falls, Oregon, to California points, Louis Gerber and J. L. Beckley having shipped 10 carloads during the week to Sacramento.

Several dairymen in Kings county have been taken into court during the past week charged with running unsanitary dairies, by State Dairy Inspector J. S. Canham.

A 1700 pound cow was purchased by Ira Morrison of Chico, from Jess Bennett, last week. It is claimed that this is the largest cow in the Sacramento valley.

Henry Wheatley, of Napa, has just received an importation of Shire horses with which to fill out the classes at the State Fair. He states that he will have about 10 head of mares and horses entered, and expects to make a good representative showing.

F. N. Bullard, Prof. J. I. Thompson and J. H. Gregg did the judging at the Woodland Fair and their work was very satisfactory.

J. A. Nunis, of Newman, purchased 51 head of Holstein and Durham cattle last week, from W. R. Belknap of Tulare, at $60 per head for the entire lot.

It is reported that the Berkeley Butter Company who have been operating extensively in the Hughson district of Stanislaus county, are having financial troubles, and as a result dairymen of that district will lose considerable money.

The second annual Hop Festival, to be held at Ukiah, September 11, 12 and 13, will afford stockmen of that section an opportunity of exhibiting their choicest animals. The list of premiums, just issued provides for all classes of horses cattle, sheep and swine.

Hog cholera has been found in several herds in the northern part of Yolo county. This disease first appeared in Yolo county in 1857, and has, since that time, cost many thousands of dollars. It is to be hoped that the present appearance will not last long.

It is stated that the leading livestock men in Mexico, near the California line, have assurances from the rebel forces that their stock will not be molested.

Several dairymen, around Newman, pleaded guilty and paid fines for running unsanitary dairies. C. A. Starkweather, State Dairy Inspector, who brought the charges, states that he finds a gradual improvement in the conditions of West Side dairies generally.

A preliminary meeting of dairymen is to be held at Patterson, with a view of organizing a co-operative pasteurizing and cooling plant. It is believed that with such an organization the dairymen will receive more for their product.

According to Forester Graves, the National Wool Growers Association's request to make a general reduction of rates for grazing sheep in the national forests will be taken up with Secretary Houston at an early date.

At its last meeting the Stanislaus Poultry Association secured the services of R. V. Moore, of Los Angeles county, and J. D. Yates of Modesto, for judges of the coming poultry show.

Although the Hampshire breed of sheep has been little known to California sheepmen in the past, more interest is being taken in them since the mutton breed has gained such a strong foothold.

The Kaupke Bros. of Woodland, have the largest flock of this breed, in the State, and report that the demand has been greater than the supply the past season.

The foundation for this flock originally was imported from Europe, by the Four Oaks Stock Farm, of Woodland, and show superior breeding in their size, and the quality of their wool.

Mr. Kaupke informs us that alfalfa pasture and hay furnishes the main supply of feed, and that he finds it profitable with this class of stock.

The weekly report of the Portland Union Stock Yards states that the cattle market last week was considerably lower than the preceding week. Eight dollars was the top price for choice steers, but $7.50 was more common. Feeders sold at $6 to $6.50, cows at $7, bulls at $5, and calves at $9. Hog shipments fell off, with the bulk of sales strong at $9 to $9.50. Sheep sales were active, with prices steady for wethers at $4.25, ewes at $3.85 to $4, and lambs at $4.25.

THE COMING FARMER.

Making farmers of city waifs, or in other words, transplanting homeless boys of 12 to 16 years from the crowded districts of the metropolis to the farms of rural New York, is the task attempted by the Lincoln Agricultural School of Lincolndale, N. Y., according to information received at the United States Bureau of Education. This school, which is a charitable institution, takes boys fresh from the city streets, gives them practical training in agriculture, teaches them proper living conditions and then finds places for them with families of farmers, thus helping the boys to better citizenship and giving the State more and better farmers.

Lincoln School is made as different as possible from the traditional "institution." Groups of attractive cottages replace the old-time single huge structure of the cities; instead of the big common dining hall usual in charitable institutions, a number of small dining-rooms are provided, and each group of boys has a separate sleeping apartment. Every effort is made to produce a real home environment, where the child may develop under conditions as nearly as possible like those of a normal home. The school has a farm of 600 acres, with model dairy buildings and a herd of about 150 cattle.

The boys are taught to produce absolutely clean milk and to grow fruit and vegetables by the most modern methods. Home and social training is emphasized in the Lincoln School. Not only are the boys trained to be good farmers, but they are fitted for entrance to the better class of rural homes.

"We feel that our training makes a boy a very acceptable member of society," declares Brother Barnabas, superintendent of the school. "Our aim is to teach the boy to know and to respect himself; to give him the means whereby he may be able to earn an honest livelihood; to teach him habits of thrift and economy, so that some day, from the savings of his industry, he may become a home owner and live a simple life under conditions which give him correct ideas of his civic and social obligations."

SHEEP.

FOR SALE—85 highly graded young Shropshire ewes; two thoroughbred rams. Perkins & Co., Perkins, Cal.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMPLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Jersey cattle, Poland-China hogs. Young stock for sale. Chas. N. Odell, Prop., Modesto, Cal.

BRAE BROOK COLLIE KENNELS—Line bred tri-colors. Working prize stock. R. F. D. 69, Santa Rosa, Cal.

JERSEY CATTLE, DUROC JERSEY SWINE. Mossdale Farm. J. E. Thorp, Stockton, Cal.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-Horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

THE BEST LINIMENT
OR PAIN KILLER FOR THE HUMAN BODY
Gombault's
Caustic Balsam
IT HAS NO EQUAL
For the Human Body —It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils Corns and Bunions CAUSTIC BALSAM has no equal as a Liniment
We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.
A Perfectly Safe and Reliable Remedy for Sore Throat Chest Cold Backache Neuralgia Sprains Strains Lumbago Diphtheria Sore Lungs Rheumatism and all Stiff Joints
REMOVES THE SORENESS--STRENGTHENS MUSCLES
Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.
Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.
The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

O. I. C. SWINE
The Big White Hog
Have a few nice young boars left of February and March litters. Sold out everything else. Am taking orders now for weaned pigs to farrow in August, September and October. These will be from large, aged and tested sows, bred to big, heavy-boned boars. Write your wants. Will have a small showing at the State Fair this year. Call around and see what they are.
C. B. CUNNINGHAM, Mills, Cal.
My hogs are recorded in the National O. I. C. Chester White Record Ass'n.

SHROPSHIRES
Pure Bred and Registered
For 1912:
140 Head Yearling Rams
150 Head Ram Lambs
Enterprise Stock Farm
H. P. EAKLE, Jr. Woodland, Cal.

BOYS Send 25c and get "The Farmer Boy" 6 months. The only paper in the world published just for you. Send today to E. E. Barley, Editor, Exeter, Cal.

Breeding Army Remounts

The Bureau of Animal Industry has received reports from its officers in charge of the breeding of army remounts in cooperation with the War Department which show that the Government's plan is very popular with the owners of mares. At the close of business on August 16, 1913, 41 stallions were in service. These stallions have covered 1452 mares during the season, an average of slightly over 35 mares per stallion. Twenty-seven of the stallions were five years old or over, and covered 1097 mares, an average of a little over 40; 10 were four-year-olds and covered 292 mares, an average of better than 29 per head; four were three-year-olds and covered 63 mares, an average of more than 15.

The number of mares covered in Vermont and New Hampshire was 241, an average of over 34 for 7 stallions, including 3 four-year-olds, and 1 three-year-old; 583 mares were bred in Virginia, an average of over 31 for 18 stallions, including 4 four-year-olds and 3 three-year-olds; 208 mares were bred in West Virginia, an average of 52 for four stallions, including 1 four-year-old; 376 mares were bred in Kentucky, an average of better than 37 for 10 stallions, including 1 four-year-old; in Tennessee, a mature stallion and a four-year-old covered 22 mares each.

The number of mares covered by mature stallions of different breeds was as follows: Three Morgans averaged 45 mares; 10 Thoroughbreds averaged 38 mares; 8 Standardbreds averaged 40 mares and 6 Saddle stallions averaged 42 mares. All ages by breeds are as follows: Seven Morgans (including 3 four-year-old and 1 three-year-old) averaged 34 mares; 15 Thoroughbreds (including 3 four-year-olds and 2 three-year-olds) averaged 32 mares; 10 Standardbreds (including 2 four-year-olds) averaged 39 mares; and 9 Saddle stallions (including 2 four-year-olds and 1 three-year-old) averaged 37 mares.

In placing these stallions, care was taken to select communities in which there was a scarcity of good stallions. Therefore, the mares bred during the past season, are, to a great extent, mares which would probably not have been bred in the absence of Government encouragement.

The number of mares bred in 1913 will be increased somewhat. In New England, breeding continues until October 1, and in Virginia the fall season is commonly used. Both conditions will operate to the advantage of the remount breeding work.

The Department is not able to draw any deductions as to the advantage of one breed above another. Local preferences were considered in placing stallions and no breeds placed in a community which were not wanted. Regardless of breed or locality, however, the desire of farmers to breed their horses to good-sized stallions is noticeable. In almost every case where stallions have had a comparatively good season, it is because they were somewhat undersized.

Congress has provided for the continuation of the remount breeding work during the current fiscal year, but no considerable extension will be possible, and no breeding districts will be organized at present.

BETTER CHANCE FOR BEEF FROM FARMS.

Vice-President Earling of the Milwaukee, who has been making a trip over the country tributary to the lines of his road, finds according to the Seattle Post the most significant feature which he encountered to be the rapid taking up of the great ranges of Montana and their transformation into prosperous farms. Montana is coming into its own as a farming State, and the time is approaching when the open range will have disappeared entirely.

Vice-President Earling is right in his statement that the change is one which will enhance greatly the welfare of the State and its people. It is a change which has come before to other States, and Montana is practically the last one to feel it. It is a change, however, which has affected the people of the whole United States in one important respect, which has features not altogether liked.

With the disappearance of the range has come likewise the disappearance of cheap cattle and cheap feed. So long as there were ranges on which cattle could find food, at no cost during the greater portion of the year, meat could be raised cheaply, not only sufficient for our own uses, but with a large surplus for export. As the cattle business expanded the condition of range cattle drove the farmers out of the business of cattle raising. They continued to buy range stock and feed it for the market, but they butchered their own calves rather than go to the expense of raising them to maturity on the farms.

With the practical disappearance of the range, the country's supplies of meat will hereafter be drawn from the farms, not from the vast plains on which cattle were fed and matured at slight cost. And the farmers have yet taken up the industry in any considerable numbers.

WHAT THE BEST JERSEY DID.

Details are now published of the performance of George W. Vanderbilt's registered Jersey cow, Kola's Katherine, No. 206,275 who recently broke the world's Jersey record for butter and milk production on a 120 days test. The test was made on his Biltmore Estate at Asheville, N. C. It was started January 24th, and ended May 23rd, 1913, including the starting and stopping days.

The test was conducted by Dr. A. S. Wheeler, a former professor of Tulane University, New Orleans. Kola's Katherine broke the world's record for milk, and for butterfat, and estimated butter for this entire period, and in addition broke the world's one day record in all particulars.

The former record was held by Loretta D., No. 141,708, which was made at St. Louis, in 1904.

The record of the test of Kola's Katherine is as follows: Total milk, 6,086 pounds; butterfat, as per Babcock test, 287.25 pounds; estimated butter, 337.94 pounds; average milk per day 50.71 pounds; average butter per day, 2.81 pounds. First month's milk, 1,851 pounds; butter 95.23 pounds. Second month's milk, 1,591 pounds; butter 85.67 pounds. Third month's milk, 1,415.50 pounds; butter 83.00 pounds. Fourth month's milk, 1,228.50 pounds; butter 72.21 pounds. Best day's milk, 66.50 pounds which tested 3.56 pounds of butter.

This new record beats that of Loretta D. for the same period by 284 pounds of milk; by 7.09 pounds of butterfat and by by 7.91 pounds of butter. Kola's Katherine also beats the one-day record of Loretta D. by 8.15 pounds of milk and by 0.81 pounds of butter.

HORSE AUCTION AT FAIR.

An exceptional opportunity will be offered purebred Percheron buyers at the coming State Fair by Rhoades and Rhoades, auctioneers of Los Angeles. The plan is to sell at auction 17 head of Percheron stallions, mares and colts, and it is claimed by the owner A. J. Stalder of Riverside that the stock is of high class breeding and conformation. We are glad to see such sales being held at the Fair as it stimulates a desire for purebred stock such as cannot be accomplished in other ways.

20 REGISTERED JERSEY BULLS

READY FOR IMMEDIATE DELIVERY

Sires by such bulls as King's Valet, who is conceded to be the best show bull and sire on the Pacific Coast. All of these young bulls have been bred and raised on our farm and carry the reliable Locke guarantee. Prices are reasonable and stock of the best breeding. Do not buy a bull until you have received prices and pedigrees of this stock, or, better, pay our ranch a visit. We exhibit every year at the State Fair for the benefit of our buyers, so be sure to visit our quarters during Fair week and to ship home a sire rich in the blood of our famous herd. Correspondence solicited.

Herd Bull, King's Valet, Gold Medal Senior Champion Bull at State Fair last year.

N. H. LOCKE CO.

Lockeford, California

A. C. RUBY, Portland, Ore. C. W. BOWERS, Sacramento.

RUBY & BOWERS

THE LARGEST HORSE IMPORTERS ON THE PACIFIC COAST

We sell more imported horses than all other firms on the Coast because we are direct importers and give a four-year guarantee which is good right at home. We have on hand at all times the largest and best lot of heavy draft stallions and mares, both American bred and imported, to be found any place in the West. If you are in the market for a high-class stallion or mare, don't fail to give us a call, as we can sell you more genuine horse for the money than any other importer in the business.

We have a large shipment of Percherons, Shires, Clydesdales, Belgians, and Hackneys now en route from Europe which will arrive at our establishment about September 10. This is an exceptionally fine lot of horses, and it will pay you to see them before purchasing elsewhere.

ADDRESS

RUBY & BOWERS, Davis, Cal.

We Have Imported More Horses Than Any Other Firm in the United States During the Last Year.

References: American Natl. Bank, Pendleton, Ore. Merchants Natl. Bank, Portland, Ore. First State Savings Bank, Marcellus, Mich. Bank of Yolo, Davis, Cal.

Will Exhibit at State Fair

"HILLCREST LAD"
First Prize Ram at State Fair, 1911

We invite you to inspect our exhibit of prize-winning stock at the State Fair, which will consist of **SHORTHORN CATTLE, SHROPSHIRE** and **MERINO SHEEP** and newly imported **DORSET SHEEP.** Stock for sale at all times.

Hillcrest Stock Farm

THORNTON S. GLIDE, Prop.
DAVIS, CALIFORNIA

1st Prize Ram Lamb, Omaha, 1911

San Ramon Shropshire Flock.

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

REGISTERED DUROC JERSEYS

CHAMPION HERD AT STANISLAUS COUNTY FAIR, 1912
THREE FIRST PRIZES AT STATE FAIR, 1912
Herd Boar, Modesto King, out of Colorado King and Helen Blazes V.
Show stock and fine young stock for sale.

JNO. P. DAGGS, Modesto, Cal.

(See me at the State Fair.)

Fair and Show Dates.

Sept. 1-6.—Sonoma County District Fair, Santa Rosa.

Sept. 2-6.—Merced County Fair, Merced.

Sept. 5-7.—Agricultural and Stock Show, Live Oak, J. A. Rice, Chairman.

Sept. 9.—Grape Festival, Escondido.

Sept. 11-12-13.—Hop Festival, Ukiah.

Sept. 13-20.—California State Fair, Sacramento. J. L. McCarthy, Secty.

Sept. 15-21.—Spokane Inter-State Fair, Spokane, Wash. Robt. H. Cosgrove, Secty.

Sept. 22-27.—Nevada State Fair, Reno, Nevada. W. D. Phillips, Secty.

Sept. 24-28.—Alameda County Fair, Pleasanton, Cal.

Sept. 29-Oct. 4—Oregon State Fair, Salem, Oregon. Frank Meredith, Secty.

Sept. 29-Oct. 4.—Washington State Fair, North Yakima, Wash. H. B. Averill, Secty.

Sept. 30-Oct. 4.—Fresno County Fair, Fresno. R. W. Wiley, Secty.

Oct. 6-11.—Kings County Fair, Hanford.

Oct. 6-11.—Festival of the Apples, Watsonville. Harry Perkins, Manager.

Oct. 6-13.—Riverside County Fair, Riverside.

Oct. 11-25.—California Land Show, San Francisco. Edward H. Brown, General Manager.

Oct. 16-17-18.—California Nurserymen's Association, Fresno.

Nov. 12-15.—Glenn County Poultry Breeders' Association, Willows. O. F. Schuchard, Secty.

Nov. 15-18.—Santa Cruz County Poultry Association. E. J. Harran, Secty.

Nov. 19-22. San Joaquin Poultry Association. W. MacKay, Secty. Stockton.

No. 24-29.—Long Beach Poultry Association. C. C. Crippen, Secty. 113 West St., Long Beach.

Nov. 25-30.—Alameda County Poultry Show, Oakland. C. G. Hinds, Secty. 535 42 St., Oakland.

Dec. 1-8.—Oregon Poultry and Pet Stock Show, Portland, Oregon. W. L. Fulmer, Secty.

Dec. 3-6.—Fresno Poultry, Pigeon and Pet Stock Association. Russell Uhler, Secty.

Dec. 4-6.—San Mateo County Poultry Show, San Mateo. Arthur R. Schroder, Secty.

Dec. 4-6.—Stanislaus Poultry Association. E. C. Nicols, Secty, Modesto.

Dec. 8-13.—Pacific International Livestock Exposition, North Portland, Oregon. O. M. Plummer, General Manager.

Dec. 10-13.—Petaluma Fanciers Association. T. McGuire, Secty.

Dec. 30-Jan. 4. Walla Walla Poultry Association, Walla Walla, Washington.

Dec. 31-Jan. 4.—San Francisco Poultry Show, San Francisco.

ALFALFA HAY BEST ROUGHAGE FOR LAMBS.

The South Dakota Experiment Station has been making some experiments with various substances as roughage when fattening lambs, and finds alfalfa hay best of all. The following is a summary of results:

1. Corn silage as a sole ration for lambs is not the best of feeds. The lambs were thrifty during the feeding period but would not eat enough silage to fatten. Only five of the ten head made a gain during the sixty-seven day feeding period. The total of these gains does not amount to as much as the average gains made by other lambs that received other feeds. The total loss for the ten head was nine pounds.

2. White sweet clover is an excellent roughage, when fed with a grain ration, for fattening lambs. The gains made rank next and close to gains made by lambs fed alfalfa hay as a roughage.

3. Pea hay is a good roughage with grain for fattening lambs. As a lot the lambs made a very uniform gain, ranking next to those that received sweet clover hay for roughage.

4. The results from the shredded corn fodder lot were the poorest of all roughages tried with a grain ration. The gains of the lambs were not uniform, ranging from six to thirty-three pounds per head in sixty-seven days. Neither was the average gain as large as that received from the lambs that were getting prairie hay with the same kind of a grain ration. However, this fodder has a value for fattening with grain, but is not equal to prairie hay, ton for ton.

5. With the several hundred head of lambs fattened at this Station during the past eleven years, the largest gains have been secured with those that received alfalfa hay with a grain mixture. The results reported show that the lot fed alfalfa as a roughage with grain made an average daily gain of fifty-one hundredths of a pound during a sixty-one day feeding period. In this experiment during a sixty-seven day feeding period, an average daily gain of fifty-six hundredths of a pound was secured. With ordinary feeding, gains from one-quarter to one-third of a pound are considered good.

Every lamb in all of the lots receiving alfalfa made comparatively large gains. The grain ration consisted of oats and shelled corn mixed half and half by weight. While with the other lots some of the lambs did not make much more than one-half as much gain under the same conditions. This then puts a high feeding value on alfalfa hay as a roughage for lambs.

PROBABLY CORRECT TREATMENT.

To the Editor: I have two patches of hard gray adobe land. One piece of 4 or 5 acres is especially hard and refractory. As it is near the house and road is very much of an eyesore as well as unprofitable. I can raise pretty good sorghum fodder on it. I want to put it in alfalfa. I want it analyzed to find what is necessary to lighten it. It must be somewhat acid as the water will not drain through it. This heavy adobe crust is somewhere near 6 to 8 ft. in thickness. Can hardly underdrain, but can get the surface water off. Can I get it analyzed at the University: to whom shall I write for information?

Do you think that lime would loosen it up properly? Do you think that I could bring it to proper tilth and quality by the following: put on all the manure I could get hold of, put on lime, (one-half to two tons or so to the acre); plow it in and sub soil as deep as possible.

I can irrigate as often as I please, practically I would like to work in a crop of oats sown this fall and plant alfalfa in the spring. Do you suppose that if I can get the top loosened up to 18 inch or 2 feet down that the alfalfa roots will penetrate this hard clay (not real hard pan)?—H. E., Colusa.

You need to know whether you have alkali to deal with or not. Getting a summer crop of sorghum would indicate that you have not, but if you are in doubt send a sample of each foot (a pound taken from the first, second and third foot) by express prepaid to the Experiment Station at Berkeley, writing a letter stating just what you wish to know.

If the soil is too heavy and not alkaline the lime and manure treatment is right. If it is heavy because of alkali the stable manure and green manure will help you—especially if you knock holes through the hard layer with dynamite.

AUCTION BREEDER'S SALE

17 Fine Purebred Percheron Stallions

Mares and Colts

Will be Sold to the Highest Bidders on the

STATE FAIR GROUNDS, SACRAMENTO, WEDNESDAY, Sept. 17th, at 10 a.m.

We are instructed by the firm of Stadler Bros., Breeders and Owners of this Percheron Stock, to dispose of same to the highest bidders during the coming State Fair—positively without limit or reserve. They are an exceptionally fine lot of individuals, all

Purebred Percherons and Registered
All entered for Premiums at the State Fair

Stockmen and breeders interested in Percheron stock should not fail to investigate this stock and attend this sale. The firm of Stadler Bros. is one of the most reliable in California.

Terms: One-third cash, balance in two equal payments in six and twelve months, with note and approved security and 8% interest. Purchasers from a distance will be required to furnish satisfactory references for credit.

For full particulars in regard to this stock write Mr. A. J. Stalder, at Riverside, Cal., or Mr. Ben A. Rhoades, at 1501-3-5 South Main St., Los Angeles, Cal., who will personally conduct the sale.

RHOADES & RHOADES, Auctioneers

Office: 1501-3-5 S. Main St., Los Angeles, Cal.

CHOICE CHEAP CONCENTRATED

MODESTO ALFALFA MEAL

FOR

CATTLE POULTRY SWINE

FOR PRICES SEE OR WRITE

THE GRANGE CO., Modesto, Cal.

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

Look us up at the State Fair and let us get acquainted.

OAK GROVE DAIRY FARM
Woodland, Cal.

Cutter's Anthrax and Blackleg Vaccines

are given the preference by 80 per cent of California stockmen because they give better results than others do.

Write for Prices, Testimonials and our New Booklet on Anthrax and Blackleg.

THE CUTTER LABORATORY
P. O. Box 257, BERKELEY, CAL.

REGISTERED POLAND-CHINAS

(Large Type.)

Royal, Orient, and Chief Price blood. 3-year-old herd boar, Young's Wonder, and fine young stock for sale.

FAIRVIEW STOCK FARM
W. A. Young, Prop., Lodi, Cal.
Will show at the State Fair.

Stock Exhibitions at State Fair.

From personal letters and interviews we are able to report a fairly complete list of the livestock exhibitors who will attend the State Fair at Sacramento this month. In this list may be found breeders who will offer for sale, at that time, stock of exceptionally good breeding qualities, and it is to be hoped that they are patronized liberally by every stockman who is contemplating the use of better bred stock. The complete list as it now appears follows:

HOGS.

Berkshires—Oak Grove Dairy Farm, Woodland; A. B. Humphrey, Mayhew; Markoff, Latta & Baker, Elk Grove; Calla Grove Farm, Mantica; G. A. Murphy, Perkins; H. L. Murphy, Perkins; E. C. Rand, Santa Rosa.

Poland-Chinas—W. A. Young, Lodi; W. H. Browning, Woodland; A. M. Henry, Farmington; Lockhaven Stock Farm, Bakersfield; M. Bassett, Hanford; A. Bassett, Hanford.

Hampshires (White Chesters and Yorkshires)—J. W. Henderson, Berkeley; C. B. Cunningham, Mills; M. T. Donahue, Holt.

Duroc-Jerseys—J. K. Fraser, Denair; University Farm, Davis; Linquist Bros., Turlock; Morris Rucker, Fair Oaks; J. E. and J. B. Thorpe, Stockton; John P. Daggs, Modesto; E. Johnson, Turlock.

SHEEP.

University Farm, Davis; J. M. Howell Co., Henleyville; T. S. Glide, Davis; J. H. Glide, Dixon; Bishop Bros., San Ramon.

CATTLE.

Herefords—Geo. Chandler, Baker, Ore.; University Farm, Davis; Simon Newman Co., Newman.

Short-horns—Howard Cattle Co., San Francisco; T. S. Glide, Davis; J. H. Glide, Dixon; H. L. Murphy, Perkins; G. A. Murphy, Perkins; Paicines Ranch, Hollister.

Red Poles—Bruce Drinkard, Harrisburg, Ore.; F. R. Porter, Halsey, Ore.; R. R. Cartwright, Angels Camp.

Guernseys—Chas. Lathrop, Stanford University; William Leland, Berkeley; A. B. Humphrey, Mayhew; J. W. Henderson, Berkeley.

Dutch Belted—Jennie Strader, Ceres; Ulysses G. Strader, Ceres.

Holsteins—Morris & Sons Corp., Woodland; Heenan & Weldon, Sacramento; T. J. Gilkerson, Lemoore; Leland Stanford Jr. University, Vina; University of California, Davis; H. E. Cornwell, Modesto.

Jerseys—Locke Company, Lockeford, Cal.; J. E. and J. B. Thorpe, Stockton; Gerald O. Hillier, Modesto; R. A. Watson, Modesto; Clark P. Hembree, Monmouth, Ore.; A. H. Brinton, Woodland; W. Fisk, Davis; E. L. Turner, Modesto; W. J. Hackett, Ceres; D. F. Conant, Modesto.

HORSES.

Ruby & Bowers, Davis; Henry Wheatley, Napa; McLaughlin, Emeryville.

WHAT CALIFORNIA IS WORTH.

The State tax rate for the ensuing sixty-fifth fiscal year to raise the amount of the third instalment of the Panama-Pacifice International Exposition tax will be 4 cents and 2 mills on each $100 of taxable property. This will raise $1,226,554.

The total assessment wealth of the State for 1913 has been fixed by the State Board of Equalizers at $3,108,324,704, or an increase of $188,981,815 over the 1912 wealth. The valuation is divided as follows:

Country lands and town lots, $1,665,130,794; value of improvements thereon, $630,530,458; total real estate and improvements, $2,282,094,217; personal property, $301,030,523; money and solvent credits, $34,611,630; total value upon which counties will collect taxes, $2,632,330,414; operative property of public service corporations, $324,907,548; railroads assessed by the State board, $151,113,742.

The table shows that but four counties decreased their total assessments under what they were in 1912, the counties being Eldorado, Humboldt, Mono, and Tuolumne.

Some of the total county increases were: Los Angeles, $73,589,096; San Francisco, $19,034,571; San Diego, $14,544,087; Alameda, $13,432,006; Fresno, $3,199,916. By the increase Fresno now leads Sacramento in assessment by over $940,000. The Fresno assessment is $92,198,576, and Sacramento, $91,256,203.

REVIEW OF STATE PRODUCTS.

The value of California's raw and manufactured products for 1912 exceeded $1,000,000,000, an increase of almost $300,000,000 over 1911. This is the startling declaration of A. L. Scott, president of the State Board of Agriculture, in the Board's annual report to Governor Johnson, compiled by State Statistician George Robertson.

Manufactured products in 1912 exceeded $500,000,000, according to the report. Orchard products amounted to nearly $100,000,000, farm products were $75,000,000, dairy and poultry products $50,000,000, and the value of other crops, including the State's mineral production of about $90,000,000 and the livestock and viticultural industries, totaled more than $275,000,000, bringing tne grand total of California's raw products to $500,000,000 for the year.

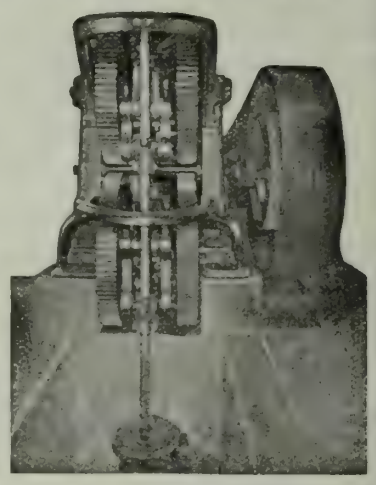
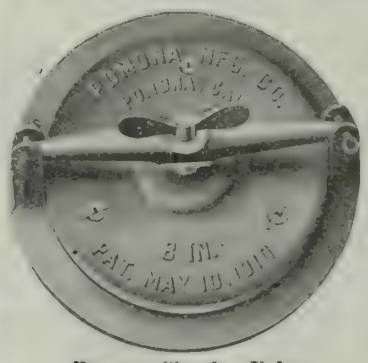
During 1912, the report states, the cotton and tobacco industries, which for several years had been in the experimental stage in California, developed into profitable activities.

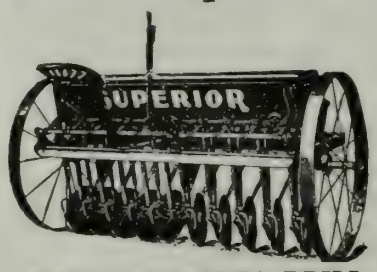
10 PEDIGREED
HOLSTEIN-FRIESIAN BULLS
2 TO 16 MONTHS OLD, FOR SALE
Handsomely marked and well shaped. Prices reasonable. Call or write.
W. W. LAMON,
Supt. Floribel Farming and Cattle Co., Hardwick, near Hanford, Cal.

DURING THE STATE FAIR
I WILL OFFER FOR SALE
8 Purebred Holstein Bulls, 7 Purebred Holstein Heifers and 50 two-year-old Holstein Grades bred to Purebred Bulls for fall calf.
See us in the Holstein barns at the Fair.
E. J. WELDON,
Pennant Holsteins.

Clark's Cutaway Double-Action Engine Disc Harrows
This Harrow Stands the Strain. Notice the Rigid Frame.
If you have an engine, you need this harrow. If you have no engine, you need both.
Clark Discs are made from the best heavy cutlery steel.
Write for Prices and Catalog.
THE H. C. SHAW COMPANY
Stockton, Cal.
WHOLESALE DISTRIBUTORS.

Hopland Stock Farm
We have available for service nine selected well bred registered Short-Horn Bulls. Also four registered Holstein Bulls whose dams are excellent milk producers. These are also ready for service. Write for prices.
HOPLAND STOCK FARM
HOPLAND, CALIFORNIA

Pomona Deep Well Pumps
are efficient and reliable

—Built by a concern that has the ability and capital to manufacture and install them properly.
The Pomona Deep Well Pump will deliver a smooth, steady, even flow of water in maximum volume—at a minimum cost. It seldom requires repairs; is long lived and economical in operation.
Being manufactured complete in our own shops—the largest of their kind in the West—we know and guarantee that the Pomona Pump will give satisfaction.
We invite you to come to Pomona and discuss your problems with our deep well and irrigation experts. If this is not possible, then write to us—today.
Pump Catalogue No. 52-P will be sent free on request.
Pomona Gates and Valves

Pomona Circular Valve.
Cheap in price.
Simple in operation.
Perfect in construction.
For Cement Pipe Irrigation
—are giving the greatest satisfaction to water users everywhere on account of their substantial construction, simplicity of operation and low cost.
They save their price over and over again in water, time and lack of repairs.
They are built up to a high standard of excellence and our immense volume of business makes it possible to sell them at a much lower price than might otherwise be expected.
Our valve catalogue "P" gives full details and prices—also some valuable information on irrigation subjects that every farmer should know. A copy will be sent free to any address on request.
POMONA MFG. CO., POMONA, CAL.
Located in the center of the largest deep well irrigation district in the world.
San Joaquin Valley Agens—PEASE-BUNDY-TAYLOR CO., PORTERVILLE.

The "Superior"


SPECIAL ALFALFA DRILL
20 Discs 4 inches apart.
33 1/3 Acres Pays for an Alfalfa Drill.
That is the actual waste in seed when broadcasted.
We can prove it to you.
Write for Prices and Catalog.
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Winter Broilers as a Profitable Investment.

[Written for the PACIFIC RURAL PRESS by MRS. SUSAN SWAYSGOOD.]

Along in the early spring when prices are high for broilers, we all are apt to wish we had a good sized crop of them. But before getting the broiler fever let do a little figuring. It is always better to figure before than after; because if we don't our pocketbook is likely to come out looking about as flat as the pictures we see of those who have been taking a course in dieting. No matter how fat and plethoric the patient looks "before" treatment, he looks "slim enough after."

FUNDAMENTAL TROUBLES.—The first trouble that meets us in the winter broiler business is getting the eggs at the time when they should be hatched for best results. The next trouble is that the fertility is usually very low at that time and the price rather high, which makes a bad combination for profit. Starting from this point, which gives us about all the troubles we can handle at one time, we will take up each one and see if we can avoid or get around it so as to come out with anything for our troubles.

THE HATCHING.—The right time to hatch, like all other questions this is a two sided one that can best be decided by the person who knows what breed he is handling. Broilers from all the heavy breeds can be made more profitable if hatched in September or October; while Leghorns and Minorcas will do just as well if hatched in November or early December. By hatching the heavy breeds then, we can get eggs while the prices are still reasonably low. At the same time the fertility will not be very high on account of so many hens being either in the molt or just recovered from it. But we have the advantage of getting the chicks out while the weather is good, so they can be run on almost summer conditions, and before the rains they will be practically safe from all danger. As the green feed problem is not much trouble to solve for all who live in the country, the feed bills need not be extra high, besides plenty of green feed insures the health of the chicks.

But if we are going to raise broilers from the small breeds we must hatch when eggs are about at their highest market price. This makes the first cost of the hatching come high; then the chicks will come when the weather is more unreliable and we must be prepared to give extra care, provide more warmth and comfort for the little fellows. But, as an offset to this, fertility of the eggs will be higher, and as a rule the chicks will run more to cockerels than those that were hatched from hens late in the season. Then again the period of caring for the chicks will be shorter and usually comes at a time when the poultryman has less to do than any other season, so taking it all together it would not appear as if there were much to choose from.

DIFFERENCE IN WEIGHT.—Nor would there be if broilers were still sold by the dozen as was the case a few years ago, but times are changed and now they are sold by weight, and right here is where the heavy breeds score in the profit. In fact they score several points, but the greatest is in weight. And if I were going into the broiler business I would never think of starting with the small breeds. But that is for everyone to decide for themselves, and according to how they are situated.

If eggs or chicks must be bought, in any case, why the preference would fall on those that would give the most weight for the money invested, and feed and time given to the raising of them.

Those engaged in raising broilers from the small breeds, generally depend on a market for the pullets at three months old, and by getting rid of the pullets at a good figure they make a fairly good profit on the whole business. But these people are generally situated so that the care of winter chicks are no more trouble to them than summer chicks, because they are fixed for caring for either one.

Moreover, they know their business better than I can tell them, so I am not writing to them or for them, but to or for the man or woman who is anxious to get some of those big prices that we see quoted during the early months of the year.

Big prices are always tempting, they are the lure of all engaged in feeding the world, yet alas, how often they fail to materialize when our product is ready.

WARNING, BUT NOT DISCOURAGEMENT.—This is not meant to discourage anyone from trying for the prize of big prices, but rather as a warning to those who have not sized up the whole situation. There is a profit in raising winter broilers, but in order to make the profit we must go into the business understandingly, not in a haphazard way. It is always best to see the drawbacks before a start is made, than after. To quote an eastern broiler man "I have seen whole broods die off like poisoned flies".

FORCING THE CAUSE.—This wholesale loss he lays to the methods of breeding and forcing so much practiced in the raising of winter broilers. And this man concluded, that the only way to raise broilers at a profit was to quit the forcing and raise natural healthy stock. The small farmer or poultryman who has his own stock and hatches from them in the fall a few chicks, is more likely to make a profit from them, than the man who goes into the business, buying eggs and chicks from anywhere, on a large scale, just to have early broilers.

The pullets hatched from late layers are the very ones that should be kept, as they make a good nucleus for a strain of winter layers. It will take time and patience to develop the strain, because there must be a lot of culling done, but it pays well in the end.

In fact there is nothing gained in the breeding and rearing of any kind of livestock without patience, time and much culling. So if anyone wants to start a strain of winter layers, that they can depend on, now is the time to make the start. Select your very best hens, that are still laying in spite of their molting sisters, and mate them to a male that you know comes from good laying stock, and hatch every egg. Raise them in a natural way letting them have the run of the orchard or field, and feeding just what is necessary for growth and a little extra for cold weather, when it comes, then mark the pullets so that you will know them next fall and use tnem as breeders for your next flock, culling out all that have not proved their worth in the nest box. It pays to use a trap nest in this case, at least the first year, and all hens that have not reached a fair average should be discarded. In three years you will have a strain of good winter layers, and if the cockerels are sold at the right time they will not only pay for the pullets feed, but give a margin of profit.

And in my estimation, this is better than making a big profit out of something that lures us to go into things for which we are not prepared and hence, likely to make a failure of on a big scale.

EXPERIENCE NOT THEORY.—All these things have been a part of my own life experience, though small in stature, big enterprises have always attracted me, and in most cases I have paid the piper, and danced to my own music. A person must know every move in the game before he or she can make it work so that they can come out on the right side of the ledger. One time I paid forty cents for a dozen White Leghorn eggs to hatch for broilers, and brooded the chicks right outdoors in December, but one night the wind put my lamp out and I lost nearly two hundred chicks. People that live in a mild climate like California take more chances than those who know what to expect, because the latter prepare for all these contingencies while we trust to everything being favorable for us. It is always best to start any venture on a small scale until until thoroughly at home with every detail of the business, then we can always go ahead if things are favorable.

It is better to raise four or five dozen broilers for the early market, and raise them without extra expense of money or labor than to go to a lot of expense and spend all our time to raise ten or twenty dozen. And it is better yet to raise none at all than to try to raise them when we are not prepared to take proper care of them.

So the gist of the whole subject is, that the profit to be made out of broilers depends on whether we are fully prepared, both with the "know how," and the proper accommodations for caring for them from egg to market, if we are not so prepared the profit will be made by selling the eggs and letting the other fellow worry over the big prices.

POULTRY.

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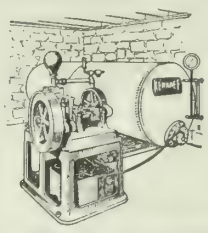

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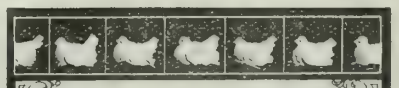

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The Home Circle.

Suggestions for the Dining-Room.

A bulletin issued by the Ohio State University, written by Misses Miskimen and Matthews, on the subject of cooking and serving good meals, contains many suggestions of value to the housekeeper. The following excerpts taken from its pages, cover important details regarding the serving of the meal. It is just these little details that help so much, that we believe our lady readers will enjoy and profit by reading. We have omitted the pages devoted to a discussion of preparing the meals and quote from the part relating to the setting of the table and the manner of serving.

HOW TO SET THE TABLE.

The covers should not be placed too close together. Twenty inches of space for each person is about the least in which one can be comfortable. At a formal meal where more silver and china are needed, at least thirty inches should be allowed. Fifteen inches in depth should be given each cover if enough room is provided for the silver and china. The table should not have a crowded appearance. Too many dishes and too much food on the table at one time seem to take away the appetite.

ARRANGEMENT OF A COVER.—The plate should be placed in the center of the space allowed for the cover, the right side up and the edge one inch from the edge of the table. When the plate is placed upside down over the knife and fork, which custom still prevails in some places, it causes a great deal of confusion when the plate is turned over and the silver pushed aside. The silver is laid with the ends of the handles on a line with the edge of the plate, one inch from the edge of the table, and is laid in the following order, which is the most convenient one—the knife, at the right of the plate with the sharp edge turned in and not nearer than the edge of the plate (the silver is never pushed under the edge of the plate): forks, at the left side of the plate with tines turned up; spoons, at the right of the knives, bowls turned up. The pieces of silver should be placed close together but not close enough to look crowded. For ordinary service, one knife, one fork and two spoons are placed for each cover. When more of each kind are added for a more elaborate meal, they are placed in the order in which they are to be used beginning with the outside piece.

Butter spreaders are frequently laid beside the bread and butter plate. Oyster forks are laid to the right beside the spoons, while other forks are laid on the left and in order of use. Sometimes this order is reversed, but one can usually tell the use of the various pieces by the shape. At meals where a large number of silver pieces are placed on the table, one is often at a loss to know which to use, but can usually learn by watching the hostess.

When a meal is so elaborate as to require extra silver there is usually a waitress, and the extra pieces may be brought in as each course is served, so that the table will not become crowded and confusion in the use of silver will be prevented.

The napkin, neatly folded, is laid at the left of the forks or in the place the plate is to occupy if it is to be brought on later. The tumbler is placed at the end of the knife and with the right side up. In filling the tumblers the water should not come nearer than within ¾ of an inch of the top. The bread and butter plate is placed near the end of the fork. If a salad is served in the meat course, the plates are placed to the left of the end of the fork and the bread and butter plate is moved farther to the right, nearly in front of the dinner plate. It allows more room where several dishes are to be served in the meat course, the plates are placed to the left of the end of the fork, and the bread and butter plate is moved farther to the right, nearly in front of the dinner plate. It allows more room where several dishes are to be served in individual plates or dishes to use a small butter plate. If vegetables are served in small dishes, these are placed at the left and below the salad. Individual salts and peppers are placed directly in front of the plate. If one set is provided for two persons, it should be placed within reach of both. If individual ones are not used there should be a pair at each end of the table.

SERVING AT THE TABLE.—A meal can be served advantageously and simply at the table. The father usually carves and serves the meat and one vegetable; the mother, the second vegetable and the tea or coffee. The tumblers may be filled just before the family sits down. Children may be taught how to serve by occasionally having them take the place of the father or the mother.

When the meal is served by passing the dishes from one another around the table there is often considerable confusion, but if a little system and care are used the method is efficient and the table kept in order. One thing to remember is that after a dish has been passed around the table, it should be returned to the place which it formerly occupied. This is usually done with care when small doilies are used in place of table cloths, or when pads of some sort are used for each dish to prevent the heat marring the table top. One way to avoid confusion is to pass all dishes around the table in the same direction, and to avoid passing them across the table. In second servings, the dishes should be passed around and not across the table. It is not necessary to remove plates and vegetable dishes before serving the dessert, though the table looks more tidy by doing so.

SOME LITTLE THINGS TO REMEMBER.—Dishes which admit of choice should be passed to the left of the person being served and should be held so as to be easily reached with the right hand. Dishes not admitting of choice, those containing individual portions, are placed from the right side and with the right hand. Soiled dishes are removed from the right. In removing a plate and placing another before the person at the same time, one should be removed with the left hand and the other placed with the right. As soon as they have served their purpose, empty dishes and all others should be removed. When dishes are removed at the end of a course, the platter, vegetable dishes and all others containing food should be removed first; then soiled china, glass and silver; then the clean china, glass and silver, and lastly the crumbs. Dishes should never be stacked; a tray should be used and several dishes carried at a time. At a meal where only the family are present, the mother should be served first and all others in order. If there is a lady guest, she should be served first and then the hostess; if the guest is a gentleman, the ladies at the table are served first. The lady guest should be seated at the right of the host, the gentleman at the right of the hostess.

SOME THINGS TO REMEMBER CONCERNING TABLE MANNERS.—Customs change from year to year and one should not make himself conspicuous by disregarding these changes. It was formerly customary to eat with the knife, to drink with the spoon in the cup, and when the plate was passed for a second helping, to lay the knife and fork on a piece of bread, but now we have other ways of using and disposing of these articles. Many other changes might be recalled.

One should remember to sit erect at the table, easily, not stiffly; not tipping back in the chair; nor stretching the legs across under the table; nor twisting the feet around the legs of the chair. There is no necessity for bending over to within two or three inches of the soup dish or plate. Elbows should not be placed on the table when food is being conveyed to the mouth.

The napkin is to be laid across the lap, not tucked in at the neck, and should be neatly folded and laid by the plate at the end of the meal. When being folded, it should be kept below the level of the table. After a meal eaten in a public eating place, as a hotel or restaurant, the napkin is not folded but laid loosely by the side of the plate. The rule holds also when one is at a banquet or invited to a home for one meal.

The silver is not put on the table to be played with, or for drawing pictures on the linen. The silver should not be brandished in the air. The knife should never be used in carrying food to the mouth. In passing the plate for a second helping, the knife and fork should be placed across it at one side. The knife should never be laid on the table cloth after it has been used, or the handles of the knife and fork rested on the table cloth with the blade or tines on the edges of the plate. When passing the sauce dish for a second helping, the spoon should be laid on the plate.

Spoons and forks are to be used only in individual dishes and plates, and never dipped into the vegetable dishes or platter. The spoon should not be left in the cup when not in use, but should be placed in the saucer. This will prevent accidents to the table linen. The contents of the cup should not be poured into the saucer or the beverage drunk from the saucer.

To tip the soup dish seems a greedy act. When thin soups are eaten, the spoon is filled by dipping toward the farthest edge of the dish. Soup should be eaten quietly. Crackers to be eaten with the soup should be taken directly into the mouth instead of first being dropped into the soup.

Meat or any food which does not divide easily should be cut gently and not as if a great obstacle were to be overcome and great effort put forth.

Bones and potato skins should be placed either on the edge of the plate, or in a dish provided for that purpose—never on the table cloth. Small bones, fruit stones and grape skins should be carried from the mouth to the plate on the fork or the spoon, and not dropped from the mouth to the plate.

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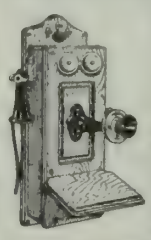

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Bread should be spread in small pieces as it is eaten, being broken rather than cut. It is very awkward to balance a large slice of bread on the hand while spreading it or eating it.

No one should be urged to eat more than he desires. When one has finished, he should not stack the dishes on the plate nor scatter the silver about. The dishes should be left where they belong and knife and fork placed close together across one side of the plate. The teeth should never be picked nor sucked in the presence of others to dislodge particles of food nor should the fingers be put into the mouth.

When there is food in the mouth, lips should be kept closed even in chewing; and one should not try to talk with food in the mouth. Eat slowly and quietly.

A French medical weekly records a way of discouraging over-enterprising tradesmen. One of these sent a Strasburg doctor a box of cigars, which had not been ordered, together with a bill for 15 marks. The accompanying letter stated that "I have ventured to send these on my own initiative, being convinced that you will appreciate their exquisite flavor." In due course, the doctor replied: "You have not asked me for a consultation, but I venture to send you three prescriptions, being convinced that you will be quite as satisfied with them as I am with your cigars. As my charge for a prescription is 5 marks, this make us "quits."—London Chronicle.

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It is rather strange how few people know the medicinal value of our common fruits and vegetables. What a pity more fruits and fruit juices are not used instead of the drugs and patent medicines.

We find in the humble and much maligned prune, one of the best, safest and most pleasant tasting cathartics there is to be had.

Nothing excepting possibly pineapple juice is more soothing to sore and inflamed throats than the juice of canned pears. For the parched condition of tonsilitis try slowly swallowing a spoonful of pear juice. It gives instant relief but must be repeated as often as the throat becomes dry.

For a common case of sore throat pineapple juice is an excellent remedy in itself. Just eating the raw pineapple without sugar, is a great aid to digestion.

Everyone knows the value of the health-giving apple. But few people know that for very nervous people, a diet of nearly all apple—cooked or raw—and an abstinence of meat will soon prove a very great benefit to them.

For nausea following a bilious attack when one suffers so from thirst and no liquid can be kept in the stomach, grape juice is a sovereign drink.

Abraham Inventor of Plow.

In the Museum Journal of the University of Pennsylvania, is an article concerning a plow said to have been invented by Abraham, and a picture of which was found on one of the Babylonian bricks in the museum some years ago. Not until recently was the discovery made that it was the brain child of the Biblical patriarch.

As is well known the ancients had seals which they set to every important document. Some used rings with antagolic seals. But in Babylon it was customary to have a seal cut in a little cylinder which was rolled over the moist clay after a tablet had been written.

The tablet at the museum is definitely fixed as coming from the fourteenth century before the Christian era, and is the first representation of a plow that exists in that section.

The tool is a combined plow and seed planter. It is the oldest combination agricultural implement known, and there is no implement today which does this combined work.—Exchange.

Health Notes.

Thin, nervous people should eat liberally of good butter and rich milk and cream, as fats are nerve foods as well as producing heat for the body.

Soda as a mouth wash leaves nothing to be desired. It whitens the teeth and brightens gold fillings. It sweentens the breath, and corrects the acid condition of the mouth that is responsible for the decaying of the teeth.

It is not too often to repeat the axiom every month, that in order to nourish the body properly, we must breathe pure air, eat plain natural foods, exercise our muscles every day and get a certain amount of quiet refreshing sleep.

A good wash for tan and freckles is made by putting three-quarters of a pound of borax into a quart of vinegar, shake well and let it stand until the borax is dissolved. Keep the mixture handy and put a tablespoonful of it in the wash basin when bathing face and neck.

A Rule That Worked Both Ways.

When he had carefully examined the shoes the physician had brought in for repairs the German cobbler handed them back, saying "Dem shoes ain't worth mending, doctor."

"Very well, Hans," said the doctor, "then, of course, I won't have anything done to them."

"Vell, but I sharge you feefty cents already yet."

"Why, what for?"

"Vy, ven I came to see you de udder day you sharged me t'ree dollars for telling me dot dere ain't noddings der matter mit me."—Woman's Home Companion.

Prize Winner.

Another one has started, and promises to become a worthy successor to "How much wood would a woodchuck chuck if a woodchuck could chuck wood?" Many heretical versions of the new teaser are at large, but the true form is as follows, and must be strictly adhered to by the faithful:

Bill had a bill-board and Bill had a board bill, and Bill's board bill bored Bill till Bill sold Bill's bill-board to pay Bill's board bill, and then Bill's board bill no longer bored Bill.—New York Tribune

Not Taking Chances.

The clergyman, visiting the hospital stopped at the bedside of a pale young man swathed in bandages.

"Cheer up, young man," he said unctiously, "keep smiling—it's the best medicine."

"I'll never smile again," replied the young man.

"Nonsense. Yes, you will!"

"No," sadly continued the battered one, "no nonsense about it. I'll never smile again—at least, not at another fellow's girl!"—New York World.

Sunshine for the Nerves.

For nervous weakness and sleeplessness, nothing is better than resting in the sunshine. It is one of the infallible tonics, good to take, and with no after bad effects. But in order to get the best effects, one should be careful of the diet, eating only what is known to agree with them. Have your sewing machine or work table in as strong a sunlight as possible. It is a finer stimulant than wine, electric treatment or massage. Live in the sunshine.

"How fast is your car, Jimpson?" asked Harkaway.

"Well," said Jimpson, "It keeps about six months ahead of my income generally.—Harper's Weekly.

Algy—You say she only partially returned your affection?

Clarence—Yes; she returned all the love letters, but retained all the jewelry. —Brooklyn Citizen.

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Ghirardelli's Ground Chocolate

Have you ever known a child who didn't smile with delight at the very mention of Ghirardelli's Ground Chocolate?

Have you ever seen a child refuse a second cup?

It is because every youngster remembers its delightful flavor—its foamy richness. And every mother knows its reputation for purity, for wholesomeness and the ease with which it may be prepared.

D. GHIRARDELLI CO.
San Francisco Since 1852

Try this food drink. Send for sample can. KNOW what a delightful beverage it is.

THE MARKETS.

San Francisco, Sept. 3, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

While there are frequent arrivals from the North, most of the receipts are on orders for the milling grade and offerings in the local market continue light. There is no especially strong demand, however, and prices, while quite firm, are unchanged.

California Club, ctl	$1.52½@1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½@1.55
Northern Bluestem	1.67½@1.70
Northern Red	1.55 @1.65

BARLEY.

Buyers show some disposition to hold off at the present prices, but offerings are not coming out very freely, and all grades are quite firm.

Brewing and Shipping	$1.40 @1.45
Choice Feed, per ctl	1.35 @1.40
Common Feed	Nominal

OATS.

There has lately been a little inquiry for black oats for seed, all offerings of which are held at high prices. Feed grades find only moderate demand at the old quotations.

Red Feed	$1.65 @1.85
Seed	Nominal
Gray	Nominal
White	1.55 @1.60
Black Seed	2.75 @2.90

CORN.

Trading in primary markets has been quite active, with continued reports of light production in the principal districts, and the local prices have been firmly maintained, California corn being firm in sympathy with Eastern.

California Yellow	$1.95 @2.00
Eastern Yellow	1.95 @2.00
Eastern White	Nominal

RYE.

The demand, as usual, is closely limited, and values stand nominally as before, though occasional lots of off-grade stock are offered a little lower.

Rye, per ctl	$1.45 @1.50

BEANS.

The bean market is rather unsettled at present, owing to the increasing offerings of new stock. So far there have been no arrivals of new crop beans of any consequence here, but supplies will be largely increased within the next few weeks, and prices again show some recession, cranberry and horse beans, large whites and limas all being quoted lower in the local market. The market has not yet developed much activity, as the trade is inclined to hold off until prices reach a stable basis, but a good movement is expected before long. Notwithstanding the local decline in limas, growers are said to be quite firm in their views, in most cases demanding about $5 for new stock in the field.

Bayos, per ctl	$3.15 @3.25
Blackeyes	3.15 @3.35
Cranberry Beans	4.00 @4.25
Horse Beans	1.75 @1.90
Small Whites	5.00 @5.25
Large Whites	3.75 @4.00
Limas	5.00 @5.25
Pea	Nominal
Pink	2.75 @3.00
Red Kidneys	3.25 @3.40
Mexican Red	3.50 @3.75

SEEDS.

There has so far been no active movement, though some lines find a little more inquiry. The spot stock of canary seed is about cleaned up, and holders are demanding a sharp advance, as none is due to arrive for some time.

Alfalfa	12½@14 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	7 @ 7½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

There has been little export movement for some time, either here or in the North, and local business is only moderately active, values showing little change.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	5.20 @5.50
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Receipts in this market have dropped off greatly in the past few days, and it is believed that the period of heavy shipments is over, as the fields are well cleaned up in most districts and the effort to sell has diminished noticeably. Prices show no quotable change so far, but the smaller arrivals have brought a much better feeling, as it has been hard to dispose of the large shipments that have been coming in for the past month. No active movement is expected here, however, as most consumers have put in enough stock to last for some time, and dealers also have considerable hay in storage locally. With no prospect of outside demand, it is not expected that prices will change until the outlook for the coming season is better known. Some of the interior markets, however, are said to be overloaded, with some prospect of lower prices.

No. 1 Wheat, or Wheat and Oat	$15.50@16.50
do No. 2	14.00@15.50
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 95c

FEEDSTUFFS.

Rolled barley has advanced again, and both oilcake and cocoanut meals have been marked up quite sharply. Other lines remain firm at the old figures.

Alfalfa Meal, per ton	$18.50@19.50
Bran, per ton	26.00@27.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	29.50@30.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Rolled Oats	34.00@35.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

There is rather an easy feeling in the garden truck market at present, owing to the large offerings of unattractive stock in most lines, which tend to hold down prices even of the better offerings. Tomatoes, as usual at this season, are very cheap, with more arriving than the market can readily absorb, and large quantities of overripe stock are pressed for sale at 20c, while the best lots will hardly bring over 40c. Green corn is fairly steady as to value, but finds only a moderate demand, while summer squash is moved off with difficulty at low prices. Cucumbers also are lower. String beans remain decidedly weak, although limas and green peas are doing a little better. Green peppers, okra, and eggplant are higher. Some garlic is offered below last quotations, but first-class stock is firmly held, while onions remain steady as for some time.

Onions: New Yellow, River, ctl	$ 1.00@ 1.05
Garlic, per lb	3¾@ 5c
Cucumbers, per box	30@ 40c
Green Peppers, box	50@ 60c
Carrots, per sack	75c
Cauliflower, per doz	50@ 60c
Green Peas, lb	3@ 5c
String Beans, lb	2@ 3c
Summer Squash, lug box	25@ 50c
Green Corn, choice, sack	75c@ 1.75
Okra, box	50@ 75c
Tomatoes, box	20@ 40c
Eggplant, box	60@ 75c
Lima Beans, lb	3@ 4c

POTATOES.

The shipping movement from the river district has been curtailed somewhat during the hot weather, but the local situation shows little change. Sweets are a little firmer, but only fancy stock will bring the top figure.

New River Whites	90c@$1.10
Sweet Potatoes, per ctl	$ 1.75@ 2.00

Dairy Produce.

POULTRY.

Broilers have lost the advance made last week, but otherwise prices stand as before. Eastern hens are still rather plentiful, preventing any firmness in this line, though offerings of California stock are lighter.

Large Broilers, per lb	24 @25 c
Small Broilers, per lb	24 @25 c
Fryers, per lb	24 @25 c
Hens, extra, per lb	17 @18 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	24 @25 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.75@ 2.25
Ducks, doz.	4.50@ 6.00
Turkeys, live	20 @22 c

BUTTER.

Offerings of fresh extras continue light, and after standing nearly a week at 32c this grade is now firm at ½c advance. Firsts also show some firmness, prime firsts remaining as before.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32½	32½	33	—	33½	35½
Prime Firsts	30	30	30	—	30	30
Firsts	28½	28½	28½	—	29	29

EGGS.

Extras have been gradually advancing, being now steady at 3½c higher than a week ago. The lower grades show a corresponding advance, and are now quite firm, notwithstanding the rather liberal supply of Eastern stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32½	32½	33	—	32½	35½
Firsts	27	27	27	—	28	28
Selected Pullets	26½	27	27½	—	28	28

CHEESE.

California flats have been coming in more freely this week, causing a drop of 2c in price and an easier feeling all round. Y. A.'s also are weak, but show no quotable change.

Fancy California Flats, per lb	16 c
New Young Americas, fancy	16½c
Monterey or Jack Cheese	14@15c

Deciduous Fruit.

The berry situation shows practically no change, most varieties being extremely plentiful, with insufficient demand to clean up the market, and the only development in prices is a further decline in blackberries and raspberries. The local market is well supplied with apples, and prices in most lines stand as before, though some fancy Gravensteins bring a slight advance. Choice lots of pears find a little better market, though there is still quite a lot of unattractive stock moving at low prices. Offerings of peaches are considerably lighter, and while the top price stands about the same, ordinary stock is cleaning up at better figures. Plums and prunes are offered in abundance at low prices, and find a fair demand, while figs move off slowly. The cantaloupe situation is worse than ever, with a heavy supply carried over from day to day and much of the stock moving at extremely low prices, while watermelons find a fair demand at the former values. Several lines of grapes are bringing a little better price, as there is a good demand for shipment to outside points which has reduced the local surplus.

Strawberries (chest):	
Banner	$ 3.00@ 4.00
Other kinds	2.25@ 3.50
Blackberries, chest	1.75@ 3.00
Raspberries, chest	6.00@ 7.00
Huckleberries, lb.	5c@ 7c
Raspberries, chest	7.25@ 9.50
Apples:	
Gravensteins, box	1.00@ 1.60
Astrachans	90c@ 1.30
Greenings	75c@ 1.00
Bellefleur	1.35@ 1.50
Common	50@ 75c
Crabapples, large box	75c@ 1.00
Pears, Bartlett, wrapped, box	65@ 75c
Lugs	75c@ 1.50
Peaches, box, wrapped	50@ 75c
Carriers	70@ 90c
Lugs	75@ 90c
Plums, crate	25@ 40c
Prunes, lug box	35@ 65c
Figs, single layer, drawer	25@ 50c
Nectarines, crate	75c@ 1.25
Cantaloupes, large, crate	50c@ 1.00
Nutmegs, crate	15@ 50c
Watermelons, per dozen	1.25@ 2.00
Grapes: Seedless, crate	65@ 75c
Malaga	65@ 75c
Muscat	50@ 75c
Black	40@ 65c
Tokay	85c@ 1.00
Cornichon	75@ 90c

Dried Fruits.

The outside demand for dried fruits is hardly as active as it was for a time, though the market remains in a strong position, and packers expect to see prices well maintained in practically all lines. The movement has in fact so far been surprisingly large, in view of the prevailing financial condition all over the world and the tendency of buyers of all food products to keep their purchases down to current needs. With light stocks in most quarters, there is little doubt that the trade will be compelled to buy more freely before long. The local situ-

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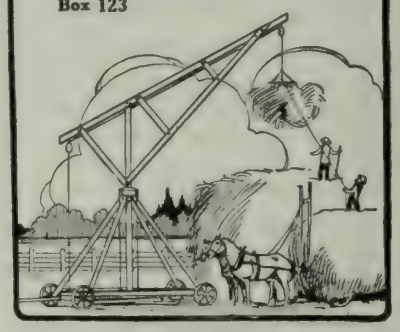

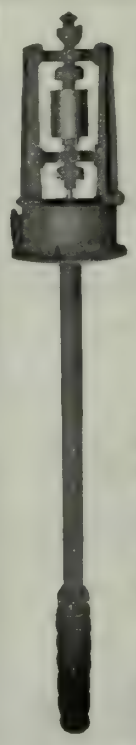

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ation shows little change. Some old crop peaches have been bought at 4½c, but these are about cleaned up, and 4¾c is about the inside figure for new crop, much of which is held at 5c or better. The expected advance in prunes has not yet occurred, but the old values are very firmly held. Some packers estimate this year's California output at 95,000,000 lbs., compared with 220,000,000 lbs. last year, with the Santa Clara crop at 45,000,000 lbs., against 110,000,000 lbs. last year. In France the crop is about the same as last year, with prices now about 50 to 60% above those prevailing here. White figs have advanced a little and are rapidly cleaning up. The New York Journal of Commerce says:

"The general situation in California dried fruits is strong, based on short crops, but the demand is slow, the policy of the average buyer seeming to be to let the packer carry the goods until needed for distribution. All reports from the Coast reflect a decidedly strong feeling among growers, which is encouraged by some show of anxiety by packers to cover short sales and provide for future requirements. According to some telegraphic reports, Santa Clara growers of prunes are getting as high as 5½c from packers. Apricots and peaches, while getting little attention from the Eastern trade, are held firmly on the Coast by both growers and packers.

"California raisins are at present without animation so far as demand from Eastern buyers, at least, is concerned. However, the Coast market retains a firm tone. The five cars of Sultanas offered through a prominent brokerage house here, on behalf of a packer, it is understood, at 5c f.o.b. Coast, remains unsold. It is rumored that re-sales might be bought in some quarters at the same price, though 5⅛c is the lowest open quotation heard on stock from second hands."

Evap. Apples, 1912 crop, lb..	5 @ 6 c
do 1913	6 @ 6½c
Apricots, 1913	10 @15 c
Figs: White, 1913	3 @ 4 c
Black, 1913	2½@ 3 c
Calimyrna, 1913	4½c
Prunes, 4-size basis, 1912....	4½@ 5 c
do 1913	5 @ 5¼c
Peaches, 1912	4½@ 5 c
do 1913	4¾@ 5 c
Pears, 1913	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912.....	3½c
do 1913	3¾c
Thompson's Seedless, 1912..	4¼c
do 1913	4 @ 4¼c
Seedless Sultanas, 1912....	3½c
do 1913	3½c

Citrus Fruits.

Shipments of oranges from California are about completed for the season, and owing to the poor quality of much of the fruit on the Eastern markets, the prices have been low. Good valencias are, however, bringing fair prices, averaging around $7 per box, while poorer grades have been selling around $2, and in some instances as low as $1.25 per box.

Lemons are also lower, the average prices ranging from $4.20 to $6 per box.

Total shipments of oranges from south of the Tehachapi to August 30th were 12,742 cars, as against 28,002 cars last season, and of lemons, 2,025 cars, as against 5,265 cars last year.

Reports from most of the citrus districts show that prospects for a fair crop grow better as the new season approaches. The effect of last winter's freeze will hardly be noticed in the total production next year, should the favorable conditions continue.

The citrus movement in San Francisco is rather quiet, owing to the abundance of deciduous fruit at this time. Some fancy brands of oranges bring a little better prices, though most offerings are quoted the same as last week. Lemons show a wider range, fancy stock being higher, while limes have dropped.

Oranges (per box):	
Valencias	$ 4.00@ 5.75
Grapefruit, seedless	4.00@ 4.50
Lemons	4.50@ 8.00
Lemonettes	4.50@ 6.00
Limes	8.00@10.00

Nuts, Honey, Hops, Etc.

NUTS.

Some business is coming out in new crop almonds, and no difficulty is expected in disposing of the light crop, though the opening prices were higher than a good many dealers expected. Walnuts are altogether nominal, as new crop prices will not be set for some time. There has been some talk of a price of 15c. The New York Journal of Commerce says: "Even the lowest of the quoted prices are much higher than the figures quoted at the opening of the 1912 season. The higher prices are attributed to the shortage in this season's crop, which, according to some prominent authorities, will not exceed 1000 tons. No important business has been reported, but it is expected by sellers that eventually the soft-shelled varieties will be taken freely by the Eastern distributing trade."

Almonds, new crop—	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, 1912 crop—	
Softshell No. 1	16 @16½c
Hardshell No. 1	15 @15½c
No. 2	10½c
Budded	17 c

HONEY.

Values are steadily held in this market, though most buyers are now fairly well supplied and the movement is light.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Light	30 @32 c
Dark	28 @30 c

HOPS.

Some good-sized shipments are now going forward, and some sales are being made at about the old range of prices, though trading is not especially active.

1913	20 @22 c

Live Stock.

Arrivals of hogs were not sufficient to keep prices down to the recent slight decline, and prices are back to the level of several weeks ago. Live sheep are a little lower, while lambs, which dropped last week, have been marked up again.

Grass-fed Cattle—	
Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1....	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7 @ 7¼c
Medium	6½@ 6¾c
Heavy	5 @ 6 c
Hogs: Grain-fed, heavy.....	8¼@ 8½c
150 to 250 lbs.....	8½@ 8¾c
100 to 150 lbs.....	8¼@ 8½c
Prime Wethers	4 @ 4¼c
Ewes	3¼@ 3½c
Lambs: Suckling	5¼@ 5¾c

DRESSED MEATS.

Steers	12 @12¼c
Heifers	11 @11½c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

The wool market is still very dull, with prices unchanged. Fall shearing has started in some places, but the fall clip is expected to be very light.

Spring clip:	
Southern mountain, free..	8 @11 c
Northern, year's staple....	13 @14 c
Humboldt, year's staple...	18 @19 c
do short	13 @14 c

HIDES.

The hide market remains comparatively quiet, though prices in all lines are firmly held.

Heavy Steers, over 56 lbs.	14½c
Medium	13½c
Light Steers, under 48 lbs.	12½@13½c
Heavy Cows, over 50 lbs..	12½@13½c
Light Cows, 30 to 50 lbs..	14 c
Kip	14½@16 c
Veal	17½@19 c
Calf	17½@19 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15.....	25 @26 c
Dry Veal, 5 to 10.....	30 c
Dry Calf, 7 down.....	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

Two good-sized lots of horses are being offered at auction here this week by contracting firms, but little fresh stock has been brought from the country for some time, the market being in rather unfavorable condition for selling. A few heavy drafters might be disposed of to advantage, but there is not much inquiry, and there is still a little easiness as to values.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650....	225@250
Chunks, 1350 to 1500 lbs.....	175@215
Wagon Horses, 1250 to 1350....	135@175
Delivery Horses, 1050 to 1250..	100@120
Desirable Farm Mares.....	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

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Especial attention is called to the fact that a liberal increase has been made in classifications and premiums on dairy products.

The Poultry and Pigeon Department has been revised and an increase has been made in premiums. In Pigeon Department no first premium will be less than $1.00; no second premium less than 50c.

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14,000 feet 3¼-inch Screw Joint Casing.
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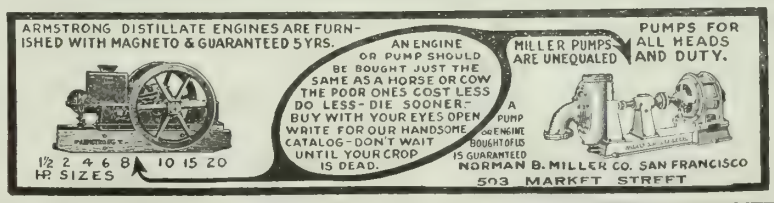

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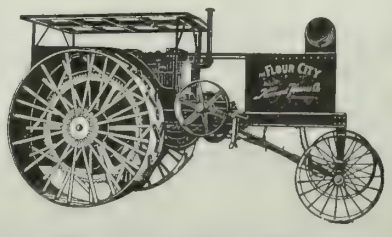

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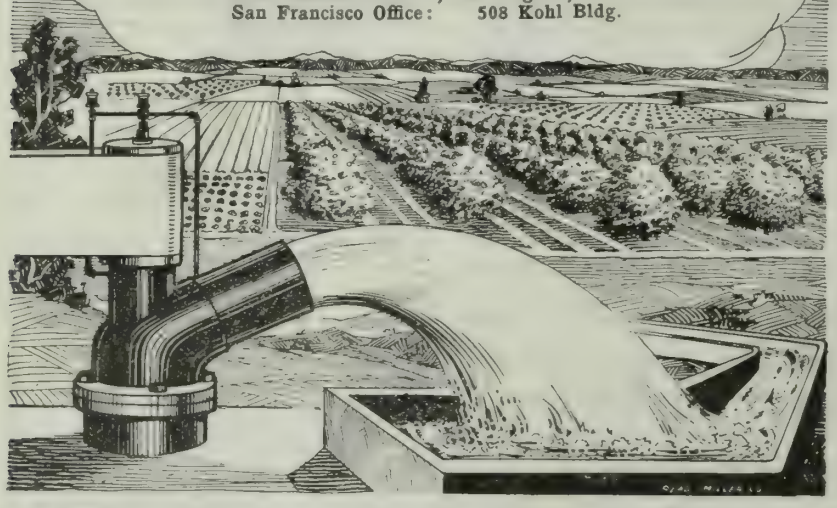

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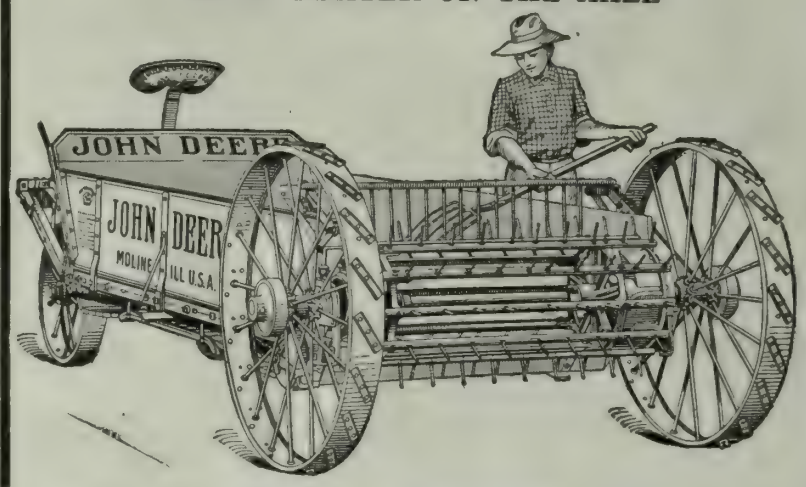
WITH BEATER ON THE AXLE



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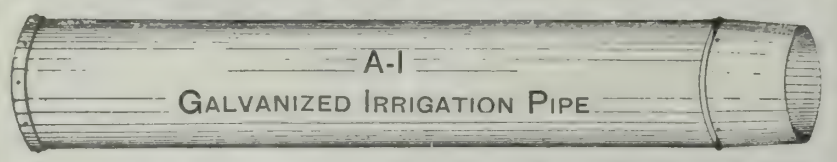

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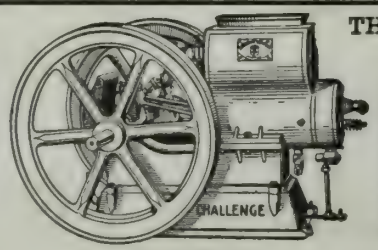

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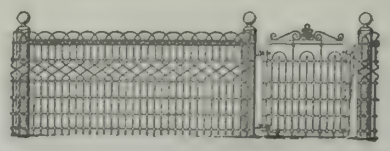

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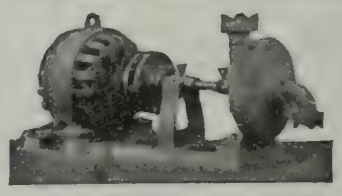

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CALIFORNIA STATE

THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 11. SAN FRANCISCO, SATURDAY, SEPTEMBER 13, 1913. Forty-Third Year.

Our California Harvest Festival.

All agricultural peoples have had their harvest festivals to celebrate the completion of the season, to display and to give thanks for the bounties that nature, through spring, summer and fall, has been preparing. In the United States the original harvest festival was Thanksgiving Day, but this has largely lost its agricultural significance, and the State Fairs have become the real method of summing up the farm prosperity of the season. At least, this is decidedly true in California.

The term, "State Fair," at first does not show this, but the Fair itself does. The State Agricultural Society is the organization in charge, the exhibits, the activities and the interests are all in this direction. This year the number of counties participating, the number and quality of the entries made, and the outline of activities, show at date of writing, the promise of a Fair that will typify the high standing and the rapid progress of California agriculture.

The following brief outline only can be given to celebrate this Fair in showing how practically all of the branches of California agriculture stand out to amaze those unfamiliar with conditions. We will start with fruit, as that possibly is most typically Californian, though surpassed by other lines of agriculture, which stand out strongly.

How Corn and Peaches Go Together on Rich Land in Glenn County.

Field of Banked Celery in the Vegetable Region of Orange County.

Citrus fruits are the most noted kinds in California, our State being the greatest orange producing country in the world. Only Florida is in the running against us in the United States, and we have 8,700,000 odd trees against their 3,860,000, and planting going ahead rapidly in the south and an even greater extent at the base of the foothills of our great interior valley. In no district of great importance is the fruit of better commercial quality, or methods of culture and marketing better developed. In spite of the worst year in history, citrus shipments by our great selling organization, handling approximately three-fifths of the output, brought to California this season $13,500,000, hardly a red-letter shipment or a loss being sustained.

Lemons far outnumber those of any other State, with 1,300,000 trees planted, and the average quality is immeasurably better than our greatest competitor, Italy.

Deciduous fruits, in comparison with other States, stand out almost as strongly. In total output we are away in the lead, though New York and Missouri accompany us closely in the number of trees. Still, it is quality, output and profits that count, and there California leads well. Only in apples is California far behind, with her nearly 4,000,000 trees, but we ship apples to Europe to compete with any; we ship our Gravensteins across the continent and have the greatest single apple district in the world for uniform and abundant production, the Pajaro valley.

Our cherry production from our 800,000 trees is also surpassed in

(Continued on Page 246.)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

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FRANK HONEYWELL - - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager
D. J. WHITNEY - - - - - Associate Editor

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Sept. 6, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.04	.42	.37	74	48
Red Bluff	.00	T	.11	96	56
Sacramento	.00	.01	.06	92	54
San Francisco	.00	.08	.01	74	52
San Jose	.00	.17	.08	88	48
Fresno	.00	.33	.00	98	58
Independence	.00	1.81	.00	88	52
San Luis Obispo	.00	.92	.05	86	48
Los Angeles	.00	T	.00	84	58
San Diego	.00	.08	.00	74	60

FARM PAPERS COMBINED.

As was announced in last week's issue of the "California Business Farmer and Irrigationist," published at Stockton, that journal would be combined with the PACIFIC RURAL PRESS and thereafter all mail should be addressed to the latter office at San Francisco. Subscribers to the BUSINESS FARMER will be served by the PACIFIC RURAL PRESS till the time paid for expires, and we trust the change will so commend itself to the new readers of the RURAL PRESS that we may have their renewals year after year.

By this combination the PACIFIC RURAL PRESS has what we believe to be the largest paid circulation of any weekly farm journal on the Coast, which we trust will be of value to our advertisers. By having a larger list of readers it will be possible to produce a better paper and by doing so please our old readers as well as the new. FRANK HONEYWELL, Manager.

The Week.

At State Fair time, thoughts naturally turn to stock, just as in spring time they turn to love—as the poet has said, in words we do not remember, with restriction to youthful thoughts, which seems to us unwarranted. We doubt if anyone ever gets too old to resist the vernal switch to love or to the memory of it, which always runs smooth: certainly superannuation never arrives to resist the autumnal push to the enjoyment of fine livestock which the season of the fairs applies to the emotions of a man who has had the advantage of growing up in a rural environment. It is this conviction which forces us to a particular line of comment this week.

None can escape the impression that this issue of the PACIFIC RURAL PRESS is prominently given to thoughts of the livestock industry of California, and we do not desire anyone to escape from it. Such an impression is suggestive of the fact that this journal, which is generally accorded leadership in California agriculture, is conscious of its duty to our animal industries and recognizes the importance of those industries as the basis of the next great step forward in the development of the State.

The fruit industries which have led in development, both in the lines of population and wealth production, during the last third of a century, are now secure and by the very force of their own greatness will advance to the full possession of their opportunity which is unparalleled in any state or country. The fruit industries are charming; full of commercial potentiality and of inspiration to the highest productive efforts.

Without their attractive force California would be still lingering in the vale of shadows where gold lost the luster which illumined the progress of the State during its first two decades. The fruit industry will not decline as did gold-seeking, but will advance each year to greater achievement and wealth—winning and yet it now needs a running mate for its own stimulation and greater success and such a running-mate, by all theoretical and practical tests, is the animal industry.

Relations of Fruit and Livestock.

While we do not yield our old conviction that the principles of mixed farming have distinctive and exceptional applicability to California, and while it is perfectly true that a man of force, industry and intelligence can bring suitable land into lines of mixed small products to the highest profit by intensive culture, we are becoming convinced that enterprises of special crops and their finished products, will be the chief means of our agricultural advancement for several decades, at least. There will be farms, both small and great, upon which soils, moisture supplies and temperature conditions vary within narrow limits, where fruits, field crops and animal products will be associated and correlated—each ministering to the success of the other, and all rewarding the owners who have heads to master advanced knowledge in all lines which they pursue, or wisdom and liberality enough to employ competent superintendents or foremen to operate the different departments of their complex farming business. And still there remains the fact that the State is not all varied within narrow limits: it also has large regions or districts with conditions superlatively adapted to special things. To apply the principles of mixed farming to such conditions is not to make the best use of them. Because of California's wide range of adaptations, we have few places where certain things are absolutely prohibited. This may be a great advantage to small mixed-farmers, who operate chiefly to supply their own tables and are content to sell enough to meet their small cash requirements. Such farmers can do better in California than elsewhere if they get good land with adequate moisture, either from above or below, and learn how to work to advantage under conditions which are different from those in humid climates and, as a rule, notably better when one understands them. In such undertakings, fruits, field crops and animals products should usually be associated and, properly correlated, they help each other.

In endeavoring to apply the broader farming efforts for large outputs of special products there is much more chance for mistakes and grievous mistakes have certainly been made in the past. Large areas of fruits have been planted where fruits, except for home or local use, should not have been undertaken. The undertakings were often based upon fruit garden demonstrations: sometimes they had no basis beyond the owners dream or the sales-agent's desire. California is so widely capable that such enterprises were not absolutely prohibited, but disappointment and loss has resulted from failure to recognize the fact that in going in for special products the producer must assure himself not only that a thing will grow but that it will grow exceptionally well and produce high class stuff abundantly. The investor in special products cannot therefore be content with a measure of adaptation, a certain amount of water, or a degree of suitability in soil, which might be a very rational basis for the small mixed-farmer to proceed in a small way with them.

All these rambling reflections lead, in our view, to this simple conclusion, which perhaps needs no argument, that what we have lost in fruit has been due to our own stupidity or greed in the haste to plant fruit enterprises on lands and in locations which belonged to some branch of the animal industry. The proper relations of fruit and livestock consist in each occupying land which belongs to it by virtue of natural conditions of soil, climate and water supply and by artificial conditions of transportation, labor supply, etc. If we have become wise enough to proceed in these lines now, it will be good indeed for individual prosperity and for the good of the State.

The Stockman's Duty.

We have run along in this way not so much to present the foregoing conclusion, which is so easy that it could present itself, as to suggest that it is high time that all those in the stock industries of California, either small or great, either producing or commercial, should now awaken to a duty which they owe to their own chosen vocations and to State development. It is their duty, first, to awaken to consciousness of the importance of their business, and, second, to advance it, as do all other men engaged in industries in which they have faith, enjoyment and profit. California is now postponing her entrance upon her third great period of development because men and women in her animal industries do not organize for their own protection and advantage and for the promotion of their industries. A few special organizations have done good work in their particular fields, sometimes continuously, sometimes spasmodically, but no association has yet established itself solidly on the basic facts and principles, which all phases of the industry mutually enjoy, nor has yet any risen to the great protective and promotive work which the whole industry of the domestic animal stands in need of. There should be such an association, broadly and popularly planned, with minimum requirements for membership and maximum enthusiasm and joy in the life and work of the collective body. Mr. Loomis alludes to such undertakings, and what they have done elsewhere, in his forcible article on other pages of this issue, and he also gives general statements about each of our live stock specialties as now existing in California.

We conceive it to be the duty of all those directly interested in, and friendly to, the advancement of the animal industry of California to associate themselves together in a large popular organization. There will always be particular things for the special organizations to do, and in their transactions, the technical and protective work may need to be elaborated in its details. But no matter how many such organizations there may be, there is still the need of a great collective assembly in which the human interests of the industry will find appreciation and engender force for its promotion. We need to demonstrate to ourselves, perhaps, that there are California men and women in this fundamental business of mankind and that men and women are the ruling factors, that they are the producers of the masterpieces which the herd-books merely identify and record and thus become the tools with which human intelligence and industry work.

Now Is the Time to Do It.

It seems particularly timely to urge such considerations upon the attention of all our animal lovers and workers right now. Our stock industries will not get the full advantage of the Pan-

ama-Pacific Exposition unless they organize to build it up and to use it. Much could still be done to help the department officials to fully attain the completeness and excellence of all animal industry exhibits, and surely individual advantage from the occasion will be small as compared with advantages made possible by organized and continual pursuit of them. Things may be gotten under headway at the fair which can be worked out later to the incalculable benefit of the industry productively and commercially. Such organization as we have in mind would not only prepare all for the exposition, but the exposition would itself open a glorious future for the organization by its contribution of suggestion and inspiration.

The organization we have in mind should be broadly popular to be widely influential. A collection of the cattle kings, the dairy queens, the poultry princes, and the like, would be very picturesque and prominent, but if things are to be done for the real people of the stock farms, the people themselves must do them. The association should be so planned that all who admire and work for better animals would feel at home in it and feel the impulse to action also. It should be, to a desirable extent, an organization capable of emotions; as it naturally would be if it should include men who so thoroughly sympathize with the feelings of their animals that they enjoy the odor of good silage as they mine it out for them—include women, also, who can hardly resist the impulse to kiss a favorite cow. These things need not be insisted upon as qualifications for membership, but there should be a spirit to the organization, born of tastes which may seem to others unaccountable—a spirit in which all desirable calculations are warmed, in a way, by emotions, which must underlie all work which is well done.

Upon such a foundation, things like those mentioned by Mr. Loomis, as accomplished in other States, can be done in and for California. No place in the world now needs them more; They would lift our large but unorganized animal industries at once into greater personal satisfaction and profit to those engaged in them and would constitute a factor in State development, multiplication of homes, utilization of lands not now profitably employed and draw new forces into action for the fuller and more symmetrical evolution of the future agriculture of California.

Queries and Replies.

Thirsty Peaches.

To the Editor: What is the cause of bitter flavor to heretofore fine flavored peaches? Is it caused by lack of moisture the last two dry seasons? Or can it be caused by the pollen from several nearby ornamental peach trees (the double-red flowering), which have bitter small fruit not edible?—W. S. C., Fruitvale.

The trees should have been irrigated in July. Fruit without conditions for good free growth is usually ill-flavored. The ornamental peaches had nothing to do with it—that is, we have both adjacent and never caught them fighting.

Those Big Tomato Worms.

To the Editor: A. C. Thompson, Fallon, is troubled with large green tomato worms. Have been told that by thinning out the vines and letting in the sunshine and light and then applying wood ashes or lime at the roots is a good plan. Do you approve of this plan? If you do, please publish it.—Correspondent, Fallon, Nevada.

We sometimes publish things we do not approve, because we do not know enough about them to judge. Therefore we give this sunshine-and-lime treatment for those finger-large worms which eat tomato, tobacco and, in this State, grape vines and some weeds. They can stand the sunshine of the San Joaquin valley, than which Nevada has none better. Probably the doctor who prescribed the solarium for these worms thought he had succeeded because they disappeared to make their mud-houses in the ground, as they always do when fully grown. Tobacco growers have fought this pest for generations and have found no method better than "worming"—which means "picking-on-em-off" and putting them under the heel as the work proceeds.

Grafting Walnuts.

To the Editor: I have some black California walnut trees on my place which I cut back last winter with the intention of budding the young, one-year-old wood this fall to some English or French variety of walnut. The trees have made a good growth this summer and have every appearance of health and thrift now. However, they have received no irrigation and I am informed that it will be useless for me to attempt September budding without irrigation. Is this true? If so, when can I bud or graft the trees, and what variety would you recommend as the best variety of walnut for commercial purposes. The trees are situated in a deep loam soil, one-half mile from the Feather river in Yuba county. —John Vicklund, Yuba county.

Whether you can bud or not depends upon whether the bark will lift freely or not. Irrigation prolongs growth and sap flow and thus makes it possible to bud later in the season than otherwise. But we should graft as an easier operation than budding and graft into the older wood rather than the younger, or graft in the forks where the new growth starts from the old. We do not know which variety will be best in your immediate location. The Franquette, Mayette, Concord, Placentia Perfection, Willson and others are bearing well in different localities. It will take some time to determine which is the best walnut anywhere and everywhere—if there ever should be any best one.

Drouth or Alkali.

To the Editor: I have an apple tree that has some apples on, but the leaves and small twigs are dying. Can some one please tell me what to do for it? Also what can I do for green aphis, and when is the best time to spray to kill them? —J. S., Lookout, Modoc county.

Supposing you have not had a sharp frost (which would manifest itself also by effects on other vegetation), the chances are that the tree is suffering from drouth or from alkali. If you find the soil moist a foot or two below the surface, the presence of alkali is indicated. To kill leaf aphis, spray with soap or tobacco solutions just as you see the first of them in the spring and keep at it until you see no more. Winter treatments do not avail much for aphis.

Oats in Almond Orchard.

To the Editor: I have an almond ranch in a very sandy soil in Contra Costa county. I am figuring on sowing this ranch with red oats this fall. Please advise me how much to sow to the acre and if it should be broadcast or drilled? What would be the proper time in the fall to sow to have very best chances for a crop? Is it possible and practical to graft English walnuts on almond trees or graft cherries on almond trees?—J. S., Oakley.

If you mean to sow oats to take off a crop thereof, do not do it at all, if you expect anything of your almond trees. If you wish to sow to plow under green, get in the seed as soon as the ground is wet down deeply by fall rains. You will find it much easier to sow broadcast in an orchard, although drill-sowing is better if you have the machinery. The difference between the two on a small orchard sowing would hardly warrant buying a drill, if you have no other use for it. Neither of the grafts you mention is possible; they will not grow.

Fire-Fanging of Manure.

To the Editor: What is the meaning of the term, "fire-fanging" of stable manure, which is used on page 163 of Professor Wickson's "California Fruits"? Does it denote an appearance like hoar-frost, seen when opening the pile? What is its effect on the fertilizing value of the manure? —Enquirer, Coyote.

Fire-fanging is the result of fermentation caused by organisms capable of using much oxygen, which raises the temperature 130° or more and sets free nitrogen compounds and loses them —to the detriment of the mass in those most valuable and high-priced substances. This occurs most freely in loose, fibrous materials like horse manure and straw. This is usually attended in its early stages by whitish appearances, though they are described as more like flour than frost. There may be whitish fibrous substances, which are common mold-fungi, before fire-fanging has actually occurred, or in manure which has not fire-fanged at all. If, however, on opening a pile you find it has largely gone white inside, the conclusion is that it has fire-fanged and lost value.

Poison in Rank Sorghum

To the Editor: I am sending you, under separate cover, a sample each of green milo maize and Shallu (Egyptian wheat), which I would be glad to have you analyze and advise which contains the poison that kills my goats, what the poison is and what remedy to apply. The two kinds of grain are planted side by side, made quite a growth and died down, leaving suckers which are still green, this being the part that did the mischief; but am unable to determine which contains the poison. After being turned in on the patch a short time, not more than half an hour, they appeared sick, and six of them died before we could drive them off.—E. L. S., Varain.

Both the varieties you name are sorghums. It is not necessary to analyze them, because the Colorado Experiment Station demonstrated some time ago that rank sorghum, usually second growth, contains Prussic acid enough to kill animals if eaten fresh. It may be safely fed if cut and allowed to sun-dry partly. Either of them may have done you harm, or both of them, for this poisonous character may be encountered in any sorghum.

Lichens on Orange.

To the Editor: I send you under separate cover a twig of an orange tree which shows some kind of a growth on it. A good many of my trees are covered with it, and I would like to know what it is and also a remedy.—M. J. G., San Fernando.

These parasitic growths which are generally called "moss" do not often make progress enough in the dry air of our citrus districts to call for special treatment. On deciduous trees in the coast districts they are cleaned off by spraying with caustic soda, one pound to ten gallons of water, when the trees are not in leaf. You can use the same stuff on the bark of the orange trunk and limbs, putting it on with a brush.

How Much Water?

To the Editor: Which is cheaper irrigation, to pay 16 cents per inch for water, or $5 per acre for season of four irrigations? How much water per acre will it take for alfalfa on this red foothill soil—elevation 1600 feet?—S., Grass Valley.

This is too shifty for us to figure out. You will have to get more information and then take a whack at it with the aid of the local teacher of mathematics, if you cannot cover it yourself. You need to know which miner's inch you are buying, and how long it is allowed to flow for each irrigating run. When you know that, you can figure the gallons you will get and turn that into acre-inches. On your soil you ought to have something like 24 acre-inches for the season, probably, in addition to the rainfall. This answer is a bluff. How old is Ann?

Top Grafting the Walnut.

[It is now time for those who contemplate grafting over seedling walnuts (either black or English) to be thinking definitely of methods and materials. The University Bulletin No. 231, by Prof. R. E. Smith and his assistants, is no longer available for distribution, supplies having been exhausted some time since. For the edification of our readers who do not possess copies of it and have grafting to do, this winter, we present herewith the description of top-grafting of seedlings of considerable size, an illustration of a very successful method, and of an orchard of seedling black walnuts, part of which was top-grafted after attaining some growth.—EDITOR.]

In working over good-sized walnut trees, either in the case of black walnuts planted in orchard form, walnuts standing along roadsides, in dooryards, or any other place where it is desired to work them over into English walnuts, or in the case of English walnuts which the owner wishes to change over into other varieties, somewhat different methods are usually employed than those used in nursery work.

Top-Grafting.—In regard to the time of grafting, choice and care of the scions, making of grafting wax, and other operations common to both processes, the same general rules apply. Trees to be worked over may be cut off either in the main stem from two to five feet above ground, if this is at least three to four inches in diameter, or the limbs may be cut off and grafted either just above the main forks of the tree or further out, according to the size of the limbs and the amount of grafting wood available. It is not usually advisable to cut off extremely large limbs, exposing a large surface of wood to decay and also making the growth of the scions somewhat less certain than if they are inserted in smaller limbs. Usually cuts of three or four inches in diameter are the most desirable size, although larger and also smaller cuts can be grafted with more or less success.

In grafting over orchard-planted black walnut trees it is not usually advisable to graft them before they have a diameter of at least three inches at the point of grafting, and four inches is even better. If the trees are grafted while quite small, the tops are likely to greatly outgrow the trunk and form a top-heavy, undesirable form of tree. In working over trees in the top, less time and fewer scions are required if the limbs are cut well back toward the main forks, making fewer stubs to work upon, than if the limbs are cut off further out where the branches are more numerous. In the latter case, however, the chances of success are somewhat better than when the work is done on very large stubs. Usually, cuts of less than two or more than four inches diameter are undesirable.

Cutting Off for Grafting.—A method used in some cases is that of cutting off the tops quite severely one year and then allowing the stubs to sprout, which they usually do very vigorously, and grafting on the best of these young sprouts the following year. In following this method some have cut off trees a foot or more in diameter directly through the main trunk and then worked the following year on the sprouts coming from this. Such a method is of doubtful expediency on account of the great liability to decay of so large a cut surface.

The time chosen for cutting off the top or limbs for top-grafting is usually that when the grafting is done, namely, just before the trees commence to send out new growth in the spring. One of the most important considerations in this respect is that of the bleeding of the trees when cut off, which sometimes take place quite profusely. No general statement can be made as to the time or conditions under which such bleeding takes place, or does not take place, since its occurrence is quite irregular. In some soils, especially light sandy ones, and in some seasons it seems almost impossible to find a time when the trees can be cut off without bleeding. We have seen practiced a method of cutting off the tops and branches early in the winter, in December for instance, when there is practically no danger of bleeding, and then at the time of grafting making a fresh cut just back into normally green tissue. In this way some who have had trouble with bleeding have thought that much benefit was obtained. Another method consists in cutting off the tops just before grafting, and then, if bleeding takes place, boring several half-inch holes in the butt of the tree near the ground in order to allow the surplus sap to escape at that point. Usually the tops may be cut off at the proper time for grafting without any serious trouble from bleeding except now and then in certain individual trees, or sometimes in certain individual orchards on an especially warm soil. The cuts should be made carefully in order not to split and tear down the stubs. The best method consists in first making a cut on the under side in the case of a horizontal limb, or cutting partly through on one side in the case of a tree cut off in the trunk, then cutting completely through on the other side an inch or two above the first cut. After taking off the limb or top, a fresh cut is made clear across, just below the first cuts, in sound wood.

The question sometimes arises, especially in working over good-sized or large trees, whether to cut off all the limbs at one time or to work over only part of the top the first year, leaving part of the original branches over until the second or even later years, thus extending the grafting over two or more years. Most experience has been against the latter method and in favor of cutting off and grafting the whole top at one time, even with the largest trees. Ordinarily, if part of the original top is left, very little growth results from the scions, the whole vigor of the tree seeming to go into the remaining portion of the original top. We have heard the plan proposed of grafting the north side of the tree first, then the east, south and west in successive years, this idea being based on the well established observation that grafting is decidedly more successful on the north than on the south side of the tree. We do not know that this method has been tried sufficiently to enable final judgment to be passed upon it, but certainly with trees of not extremely large size, and especially in grafting over orchard-planted black walnut trees, it is more practical to cut off the whole top, either in the trunk or main forks, and graft it all at once.

A Madified Cleft-Graft.—The method used in top-grafting is usually the ordinary cleft graft or a modification of the same. Some operators simply split the stock through the middle, insert the wedge in the cleft, trim the split edges of the bark and cambium smoothly with a sharp knife, cut the scion to a smooth bevel on either side, and insert the same carefully, taking special pains to make a good fit and bring the cambium layers of the stock and scions into intimate contact. After removing the wedge, some grafters fill the cavity across the heart of the stub with paper or some other material before waxing. Another, and in our opinion somewhat better, method of cleft grafting, especially on stubs more than two inches in diameter, is that shown in the illustration. This differs from the ordinary method in that, instead of making one cleft across the middle of the stub, two or more are made at uniform distances apart out near the edge, splitting off slabs about one-half inch in thickness. A special tool, useful both for this or for ordinary cleft grafting, is also shown. In making the splits, the splitting wedge is held in a horizontal position over the place where the cleft is desired, and driven in to a depth of about one-half inch. It is then tilted up in a slanting position and driven down to a depth of one and a half to two inches, first at one end of the cut and then at the other. The limb in the picture was 3¼ inches in diameter. In this two clefts were made, each ½ inch thick by 2¼ inches long and 2 inches deep. The rough edges of the bark were smoothed with a sharp knife and the cleft held open with the terminal portion of the tool.

Modified Cleft-Graft and Method of Insertion.

The Scion.—The proper scion is prepared by beveling off one end into a wedge shape, cutting entirely through the pith on one side, and then down to the pith on the other. The back side of the wedge, that which is placed toward the outside of the tree, is made wider than the side which goes toward the interior of the tree. There should be two buds on each scion, one near each

end as shown in the illustration. Two scions are carefully fitted into each cleft, taking great pains to make a good fit and bring the cambium portions of stock and scion into intimate contact. If the bark splits irregularly, it should be smoothed with a sharp knife. In all cleft grafting it is well to slant the point of the scion a little toward the center of the stock so that the upper end of the scion points out a little in order to be certain that the cambium may cross at least at one point. In grafting limbs up to four inches in diameter, two clefts or four scions are commonly put in by this method. In larger limbs more clefts and scions may be used. It is desirable to put in as many scions as possible without at the same time splitting off slabs of too little thickness, since the more scions that grow the quicker will the cut surface heal over. It is much better to get several scions started, even though it be necessary to cut off all but one the following year rather than having only one scion from the first with a large surface exposed to decay. After inserting the scions and removing the wedge, the scions may be tied in with soft budding twine, wrapped several times around the whole stub, but this is not ordinarily very necessary. Only in cases where the work is being done with extreme care is tying often resorted to.

Waxing.—One of the most important operations of the whole process is that of waxing. Grafting wax may be made with this formula: Resin, 4 lbs.; beeswax, 1 lb.; linseed oil, 1 pint. Every part of the exposed surface should be very carefully painted over with a solid coating of wax. Great pains should be taken to see that no spots are left, however small, either on the cut end of the limb or the clefts containing the scions, which are not completely covered with wax.

If any opening is left through which the air may penetrate, drying and oxidizing the fresh surfaces of the scion or stock, the grafts will almost certainly perish. Much care should be taken while waxing not to knock out or disturb the scions in the least. One waxing is not sufficient, but after a few days the grafts should be gone over again, closing carefully any places found to be unwaxed. A little later, when the grafts begin to grow and swell more or less, it will be found that the wax is very likely to split or peel off, and so they should be watched very carefully until thoroughly united and kept liberally covered with wax. The proportion of resin and beeswax contained in the material may require variation after the first waxing. Too much beeswax makes a soft wax which melts easily in the sun, running away from its proper position, while if too much resin is used the resulting wax is stiff and brittle and readily cracks. Beeswax is much more expensive than resin, and it is therefore desirable for economy's sake to limit its use.

It is the practice of some grafters to enclose each stub, after grafting, with a large paper sack, hood or cuff, in order to protect the tender young sprouts from sun, wind, or frost. As the sprouts elongate, the paper is pulled open at the top to let them through. If the scions are tied in with string, this must be cut as soon as they are well started, in order that it may not cut into the growing scion.

Top-grafting at best is not always successful, even with the most experienced operators. Much depends on the condition of the tree at the time of grafting in regard to the activity of the sap, and this cannot be foretold or controlled in many instances. At the same time, a skillful operator, especially if he has a sufficient choice of grafting wood, can in most cases top-graft the walnut with fairly uniform results. Even after successful grafting has been done, the young sprouts coming from the scions are extremely susceptible to injury from frost and also from hot winds, and failure sometimes results from these sources.

Black Walnut Seedlings Grafted in Orchard—Tree on Left Not Grafted.

LOGANBERRY JUICE.

Among other remarkable qualities loganberry juice has the property of retaining its freshness for several weeks without any sterilization whatever, according to recent investigations conducted by Professor C. I. Lewis, horticulturist of the Oregon Agricultural College. About the first of July, Professor Lewis took considerable quantities of loganberry juice, without heat, sweetened it to taste and poured it into bottles which he set away in the basement rooms of the Horticultural building. The bottles were not sealed, nor was the temperature of the room cooled below normal. At the end of six weeks an examination of the juice showed that its appearance was unchanged and that fermentation was just beginning to set in. Upon tasting, the juice was found to be sweet, with no more than just a "sparkling" taste to enrich its flavor. Professor Lewis considers its self-sterilizing power very unusual and destined to make it a popular beverage wherever loganberries are grown.

Prof. Lewis gives a formula for making loganberry juice as follows:

Put barely enough water in the bottom of the kettle to prevent fruit from sticking and burning. Fill with fruit and heat (do not boil) until the fruit is sufficiently softened for releasing the juice. Assist in softening process by mashing the fruit as it is heating, in order that it may be over the fire no longer than absolutely necessary. Turn into jelly bags, drain and squeeze. Now sweeten the juice with one-third its measure of sugar. Heat to the boiling point(but do not continue to boil it) and bottle it at once or seal in fruit jars. This makes a rich syrup which should be diluted with four or five parts of water to one of syrup for drinking.

CALIFORNIA RICE GROWING.

[Written for the Pacific Rural Press by J. C. Loomis.]

As a diversified crop State, California leads them all in the number of different crops, their quality and the quantities produced. Our fruits, cereals, and live stock have long been spoken of all over the country as to their quality and the large scale in which our operations are carried on. While this was due a great deal to past achievements, so far as magnitude is concerned, we are now entering into the growing of the largest cereal crop of all, rice.

Experiments have been carried on in Butte county of this State for the past five years, with the result that the present time growers are able to realize good returns from the investment, and, what is still better, to realize this revenue from land which would not ordinarily be termed first-class land.

This year four or five thousand acres have been planted, and in August the growers were expecting to harvest good crops.

Most of the rice land so far developed lies along the Sacramento river, which usually overflows during the winter months, but which is fast being reclaimed with big levees thrown up by a number of dredges. The soil is a sediment soil and varies in depth from one to three feet, this being an essential thing for good rice land, as there must be a hardpan or clay subsoil to conserve the moisture as much as possible.

These lands are ordinarily very level naturally, so it is not much of an expense to prepare them. About the best way to explain the method of preparation is to state that it is almost a repetition of alfalfa checking. The checks are much larger than ordinarily seen for alfalfa and instead of having a gradual slope are as near level as possible; in fact, almost identical to a square alfalfa check, only much larger.

The water on the ranch we visited was brought by canal from the Sacramento river, being pumped from the river with pump and gasoline engine. At first the owners tried to pump the water at the field with an ordinary pump, but found it so expensive that they thought it advisable to bring it from the river, which is quite a distance from the rice fields. Laterals have been built from the main canal the same as for alfalfa, and in building them a good deal of care is given as they are permanent fixtures.

After the land has been prepared, the rice is sown about the middle of April, the same as barley, either broadcast or drilled in. The land is kept good and moist, and after the plant appears above the ground the land is kept flooded continually until the ripening period in the fall.

This flooding is one of the most necessary features of rice-growing, the practice being to keep the roots covered with water, allowing the stem proper to be exposed to the light and air.

About the time the crop begins to ripen, the flooding is discontinued, and the land is drained with drain ditches made for that purpose. After the soil is thoroughly dried and the harvesting commences, which is done in much the same manner as wheat or barley harvesting, by the use of binder and threshing machine.

While the cost of rice production is considerable, due to the large amount of water necessary, the net returns are comparatively large compared to other cereal crops. With rice, as with all other crops, the net returns vary with the different growers, some making as high as $70 per acre.

Considering that the rice crop of the world is the largest of any cereal grown and that 78,911,271 pounds of rice, with a valuation of $2,046,825, was imported to the Pacific Coast last year, there is little question but what the market is open for a large increase in production.

While all of the land along this overflow section is not valuable for rice culture, there are unquestionably thousands of acres of land in that section which can be more profitably grown to rice than any other crop, and in the future our rice acreage will no doubt be materially increased, making an extra revenue for the State not heretofore enjoyed.

OUR CALIFORNIA HARVEST FESTIVAL.

(*Continued From Page 241.*)

value, but the fruit is equaled in quality by only that of the Northwest, and the time of marketing and the big demand for the fruit all over the country at big prices puts this fruit far in the lead of any State in acreage value. With the other fruits, we have everything our own way, for even when the acreage is surpassed, as seldom happens, the unsurpassed quality and heavy bearing make production and value far in the lead. This is so with our 12,000,000 odd peach trees and our 1,800,000 pear trees. With practically all of the other fruits we have either no competition or so little that it counts for almost nothing. With apricots it is 16 to 1 against our nearest competitor; plums and prunes more than 4 to 1, olives 90 to 1; almonds 200 to 1, walnuts 10 to 1, with heavy and uniform production making the odds in our favor far beyond what mere figures can indicate. Texas, for example, is far in the lead in fig trees, but we have a production of fruit 2 to 1 in excess, with unlimited possibilities of a sort not possible in that State. With the minor fruits, our position is similarly strong.

Grape growing is even more in our favor than the deciduous fruits. We are, with our 80,000 tons of raisins in a good year, the only raisin district worth noting in the United States, and the greatest district in the world. Our table grapes are of a kind impossible of profitable production throughout the rest of the country, and our wine grapes likewise.

Time will not permit me to go into detail on the field crops. Our delta region is noted the country over for the potatoes it produces, and the great acreage production with high quality; our sweet potatoes are shipped over half the country; our asparagus, in quality, quantity and market distribution, is noteworthy, as is our celery and several other field crops, which, under the handicap of a long and expensive haul, go across the continent in an abundance and value that no other State can equal for similar areas. Even the cotton that is grown in California, for the long staple it has, returns such a price per pound that it stands out notably in spite of the far greater acreage elsewhere. Our beet sugar acreage may be a little surpassed elsewhere, but when the harvest is over and manufacture completed, the smaller acreage suffices to keep California in the lead as the greatest beet sugar State of the Union. For lima beans we have not only practically no competition, but nearly a world monopoly. Hops and minor crops are also noted, and it is exceptional if any California crop does not surpass in the quality of the product the amount produced per acre and the uniformity of production of similar crops planted elsewhere. It is our soil and climate that are responsible.

This is seen in our livestock just as it is elsewhere. The soil produces abundantly, and the climate is more than satisfactory. We have neither the strain of hard winters to contend against, for one thing, nor the enervating effect of tropical climates that soon makes cattle run out and new blood a necessity to keep up the standard of quality. Our pure-bred beef cattle and sheep show, after generations of California climate, how suitable California is for stock. Our dairy cattle in the show ring can stand side by side with cattle anywhere, and when it comes to performance, too many records have come to California to doubt the ability of our breeders or the suitability of the climate. Even young stock imported from the East, by maturity is larger, stronger, and better than similar stock left at home.

Alfalfa is the greatest stock food grown. Elsewhere, except in semi-arid regions, it is a fight to make it grow. In California, if moisture is at all available, it grows wild along the roadways or elsewhere. Save only in the other semi-arid districts of the Southwest, its growing season is so much shorter than in California that the acre production is much below ours, and green feed from it is available for a much shorter time.

All of these products of field and farm are displayed at our annual harvest festival, the State Fair, and only there. The fairs have been growing greater, better and better patronized every year. They give those who attend more pride in the possibilities of our Golden State.

SONOMA AND MARIN ENTERTAIN.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

That the District Fair spirit is being revived was evidenced at Santa Rosa last week when Sonoma and Marin counties joined hands in the making of a very successful district fair. The attendance ran close to a 4,000 per day average and included persons from all sections.

A remarkably good showing was made of agricultural, horticultural and livestock products and showed that good farming methods are paying in that district. The livestock exhibits were rich in quality and number, for a county fair, and had entries in most divisions.

The horse exhibits attracted a great deal of attention, the exhibitors being: Shire stallion, Jack London; Shire stallion, mares and colt, Hopland Stock Farm, the latter also exhibiting a fine lot of Hungarian ponies. Percherons were entered by C. Olsen, of Geyserville, who showed four stallions, two mares and two colts; E. E. Walters, of Hemet, exhibited four Percheron stallions, making a total of eight head for the aged class. Walter Brinton showed a Clydesdale stallion.

Jack London received first in the Shire division, with the stallion Neuadd Hillside; C. Olsen first in Percherons, and W. Brinton first in Clydesdales.

Eaton and Hughes showed their bunch of jacks and jennets.

The Short-horn divisions were well represented by the Hopland Stock Farm and F. Roberts & Son of Penngrove, the last named showing the milk strain.

In the beef class King Marco was first in the yearling class, King Lorne was

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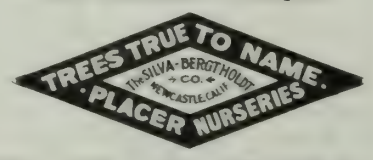

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second, and Snow Girl's King third, King Marco taking sweepstakes.

The bull College Count 2nd was first in the milk strain class, and Adirondack Count 2nd was second.

The Jersey cattle exhibits were furnished by S. B. Wright, of Santa Rosa, and made up in quality what was lacking in quantity, while the only Holsteins were two bull calves shown by the Hopland Stock Farm.

E. C. Rand received first prize in the aged boar class of Berkshires with the boar Braebourne Burlington, and also showed a nice lot of sows and pigs. S. B. Wright had entries in several of the Berkshire classes, also F. Brush and S. Brittian.

Mr. Wright had several entries in the Dorset sheep divisions. Professors True and Thompson, of the University Farm at Davis, did the livestock judging.

A large tent was provided for the poultry exhibits, where a good-sized showing was made of poultry and pigeons, entries being made from various points in the State. The fact that this is a poor season for showing poultry did not hamper breeders in putting up a good show, and a large attendance was attracted daily.

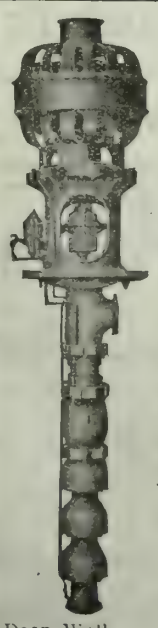
In the building devoted to agricultural and horticultural displays, the exhibitors showed the kinds of fruit and vegetables Sonoma county is noted for, including apples, prunes and grapes. The fact that many of the varieties shown were creations of Luther Burbank and were shown in his home town added special interest to outside visitors.

The race meet came in for the usual amount of interest and some exciting heats were made which greatly aided in the success of the fair.

The promoters of this year's show are jubilant and state that next year plans will be made to have an even better one than that of this year.

Only ordinary steers were in evidence at the Portland Union Stock Yards the past week, and as a consequence prices ranged from $6.75 to $7.75. Feeders were in good demand, also cows and heifers, the latter being quoted $6.35 to $6.65. The bull market was better, and prime light veal was steady. The hog market ran from $9 to $9.50, with a downward tendency. Sheep and lambs were steady with last week's quotations.

The Ehmann Olive Co. has received notice that a gold medal has been awarded an exhibit of olive products made at the International Exposition, Ghent, Belgium.



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How to Plant Potatoes.

The government reports are that the potato supply of the whole country for the coming year will be scant as this year's crop is notably short. It is possible that we may be able to slip them over some new potatoes next winter and spring when their old ones are gone. It sometimes happens that way quite profitably. Anyway a discussion of seed potatoes and how to plant them is very timely. We find that Charles B. Cox, of Mahton, Washington, has been observing closely, and writes a very interesting account of it in the Northwest Horticulturist:

SELECTED SEED.—Does it pay to plant "selected seed," and, if so, what kind of seed should we "select"? That is a question that bothered me two years ago, and none of my neighbors seemed able to give me a satisfactory answer. The Experiment Stations claimed it paid to select your seed in the field by taking the best hills for seed, but none of the potato growers around here were doing it, and they seemed to be getting pretty good crops without seed selection.

Attempting to purchase seed I found the ordinary run comprised almost everything in the way of shape, size and disease—scab and rot. While assured that it would give me as good return as anything I could get, it didn't "look good" to me.

I decided to experiment with some of the more feasible methods and see which gave me the best results on my new ground under irrigation. The point I particularly wanted to prove was whether or not I could improve the quantity and quality of my yield by selecting for seed smooth, medium-sized "typical" specimens from a bin of average market-run potatoes.

To get the best possible start, I secured some very nice looking unsorted "Netted Gems," from Minnesota, also some Burbanks that appeared much above the average. Most of my experiments were made with the former variety.

SOIL CONDITIONS AND GROWING.—The potatoes were grown on practically new land between the rows of one-year-old orchard; the land was deeply plowed and well harrowed prior to planting, and was irrigated once before and three times after planting. All seed was dipped in formaldehyde as a preventive of scab, and was cut and planted entirely by hand, two horses plowing the furrows and covering them, for three men planting. The crop was dug about November 1st, with an elevator digger, and sorted into five grades as follows:

First Grade—Smooth, well-shaped specimens weighing not less than 1½ pounds. (For fancy trade.)

Second Grade—Medium size, extra smooth, uniform shaped "Typical" specimens. (For "Select" Seed.)

Third Grade — Well-shaped potatoes suitable for seed, but slightly under market size. (For seed.)

Fourth Grade—Market-size (i. e., sizes between No. 1 and No. 3), with all poor-shaped ones excluded. (For market.)

Fifth Grade—All poor-shaped, badly-cut or under-sized specimens that are sound. (For pig feed.)

BEST QUALITY FROM SELECTED SEED.—Comparing the quality of the yields secured by planting "ordinary market-run" (Grade No. 4) and "Selected-full-sized" seed (Grade No. 2), we found that in sorting 1000 bushels each of the product from "Unsorted" and "Selected" seed, the selected seed yield shows a larger per cent of large-sized potatoes, considerably more of the perfect shaped specimens (Grade No. 2) and less of smaller sizes. Incidentally it may be remarked that the market grade (No. 4) from the selected seed was much superior in shape, size and general appearance to the same grade from market seed

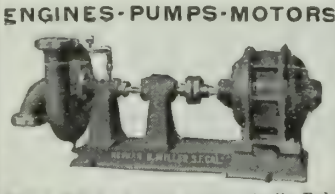
QUANTITY GREATER FROM SELECTED SEED.—The crop on 4¾ acres planted to common market seed, compared with about 1½ acres planted with selected seed shows that the yield per acre from "Selected" seed was 22½ per cent greater than from unsorted seed, and this increase was secured with seed merely selected from the bin at planting time and not from field-selected seed which would be much better. But even so, I secured nearly one-fourth more spuds at harvest time by using seed selected purely for type and looks.

KIND OF PIECES TO PLANT.—I found that on our strong soil, with plenty of moisture as afforded by irrigation, my best yields per acre came from large seed pieces. The heaviest experimental yield came from two rows in which whole potatoes, small ones—(Grade No. 3) were used as seed. When the full-sized potatoes were used, the biggest yield resulted from seed split lengthwise once—i. e., half potatoes. It is probable that the planting of smaller sized potatoes year after year would have a tendency to run down the size of the spuds and thus diminish the yield in time, but for a single season, when the medium-sized potatoes are selected carefully from good stock, no one need be afraid to plant them one year, unless the stock from which they came from is run down anyway. In that case either plant the "Selected" large ones or get entirely new seed.

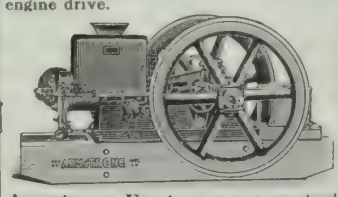
Of course, the planting of "halves" necessitates some three times as much seed per acre as the ordinary method of cutting to two or three eyes, but I found it increased my yield very materially, and it does not take a very big percentage increase in the yield to pay for an extra two-thirds ton of seed.

I have been told by several growers that small potatoes planted whole would yield a large number of under-sized potatoes, but in practice did not find this to be the case. If anything, the reverse was true, for the quality of the product from the small whole seed was of the very best, both in shape and size.

ENGINES-PUMPS-MOTORS



MILLER Hydraulic Automatically Balanced Enclosed Runner, Ring Oiling Pumps are unequaled either for motor or gas engine drive.



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I sell to the consumer. Box shook and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon tanks, Spraying tanks. Independent.

H. F. WILSON, Stockton, California.

This Farmer increased his profits from 6 to 18 per cent

THE profits from a fifteen acre farm in Santa Clara County returned 6 per cent income on a $1,000 acre valuation from 1899 to 1911.

The ordinary successful farm methods were practiced, but it was impossible to get a crop three years in succession. The biggest year the gross crop brought $2515. Every third year the crop ran down to $150 to $425.

In 1911 the owner of the farm wrote to us. We made a thorough investigation and advised accordingly. The GAVIOTA BRAND of Fertilizer was used, spraying was advised and a change of agricultural methods enforced.

The Result: 1911, $4,080 crop; 1912, $3,800 crop; 1913, estimated crop $4,500.

Average net income for three years after deducting cost of fertilizer sprays and cost of operation, 18 per cent or $2,684 on a $1,000 per acre valuation. We'll be glad to refer you to the owner.

Our service department under the management of P. L. McCreary, who was for five years chemist in the fertilizer department at the California Experiment Station and for three years previous to that engaged in soil and water work for the United States Reclamation Service, is prepared to perform the same service for you. It costs you nothing. You owe it to yourself to know all about fertilizers and fertilization. We have just issued a book written by Mr. McCreary that will give you complete knowledge on this subject. Send for it today stating your acreage and kind of crops you raise. It's free.

Pacific Guano & Fertilizer Co.
803 SECURITY BUILDING, SAN FRANCISCO
Selling Agents for Southern California, Chapman Fertilizer Co., 17 Central Building, Los Angeles.

GAVIOTA
Brand Fertilizer
IS THE FERTILIZER OF QUALITY

Under this name we have various fertilizers which produce maximum results according to the exact needs of your crops. The value of a fertilizer from the standpoint of results depends upon the quality of the materials of which it is made, as well as the total amount and proportions of the various plant food elements in it. Gaviota brand contains the best.

THE PACIFIC GUANO & FERTILIZER CO. SAN FRANCISCO, CAL. TRADE MARK

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AN ORGANIZATION ALONG BROAD AND LIBERAL LINES FOR A NATION-WIDE SAFE AND SANE DISTRIBUTION OF TREE FRUITS. OUR SERVICES ARE AVAILABLE THROUGH OUR ASSOCIATE MEMBERS TO ANY AND ALL SHIPPERS OF FRUITS.

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All information free of charge. Send for catalogue.
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Greenbank Powdered Caustic Soda and Potash still the best fruit dip.
T. W. JACKSON & CO., 42 Market Street, San Francisco, Cal.

Cotton Growing in Arizona.

[Our readers in the new California cottondi strict adjacent to the Colorado river will be interested in an outline of what their Arizona neighbors are doing with this world-textil of which California and Arizona produce such a distinctly superior staple. The following account is compiled for the Progressive Farmer of Phoenix, Arizona from what seem to be fresh and authoritative data.—EDITOR.]

On account of the high value and commercial importance of Egyptian cotton the United States Department of agriculture began making extensive experiments in its production about eight years ago at its station operated in conjunction with the Pima Indian school at Sacaton, Arizona, which is about 50 miles southeast of the city of Phoenix.

The first year the methods used in growing upland cotton were followed with the result that only about 250 pounds of lint to the acre were produced. That yield, however, was not profitless, but was not satisfactory and since that time the station has been working to increase it, by carefully selecting seed and changing and improving cultural methods with very gratifying results. Last year the ground that yielded 250 pounds of lint per acre eight years ago, produced approximately 700 pounds which were sold at from 20.1 to 21.35 cents per pound on board cars. The station has given out the following figures covering this operation:

COST PER ACRE.

Farming operations to time of picking	$15.00
Seed	1.00
Picking	50.40
Ginning	12.00
Total cost	$78.40

RETURNS PER ACRE.

Lint cotton 700 pounds	$140.00
Seed	18.00
Total returns	$158.00
Less cost to produce	78.40
Net returns	$ 79.60

In the spring of 1912 the farmers of this valley planted this crop for the first time. In all about 350 acres were put in and the results were so successful that this year over 4000 acres have been planted. The following figures show results obtained and what can be expected from good farming:

POUNDS OF LINT COTTON PER ACRE.

O. A. Warner	666
George Rogers	675
M. C. Phelps	794
J. Valenzuela	442
Robert Bowen	548
Imel & Ruse	674
Laib Bros.	497
E. Birch	610
O. C. Bullock	866
E. E. Hill	675

This cotton ordinarily sells at twice the price of Upland or Southern cotton, and heretofore has only been grown successfully in Egypt. The land on which it can be grown in that country has for the past 20 years constantly risen in value, and today sells for between $500 and $1000 per acre depending upon its relative fertility and location, and it commands such prices notwithstanding that the average yield is only from 300 to 400 pounds of lint per acre.

PLANTING.—Planting should be done between March 10 and April 10, or as soon as possible after danger of frost is over. Either a one or two-horse planter may be used, though the latter will be found more satisfactory. In soil that has a strong tendency to bake or run together it is best to use a planter with an open rim press wheel that packs the soil down on both sides of the seed rather than directly above it, though in ordinary soil the solid press wheel may be used with equally good results.

Land very rich from previous crops of alfalfa and Bermuda grass should be planted in rows 4½ feet apart. New land, desert land, or grain land that never produced alfalfa should be planted in rows 3½ feet apart.

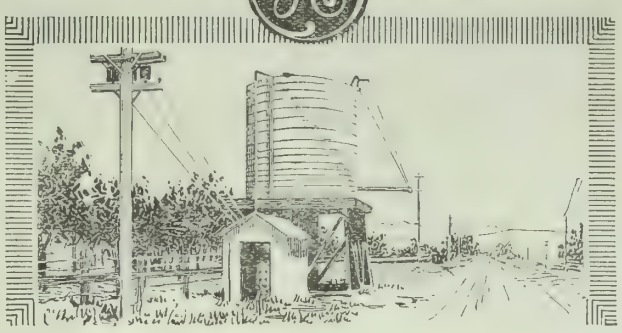
Under normal conditions seed should not be planted less than one inch nor more than two inches deep. If the soil is in perfect condition, 1 to 1¼ inches is sufficient depth to plant, but one should always bear in mind that the seed must be planted deep enough to guarantee sufficient moisture to germinate it and bring the young plants above the ground. It is inadvisable to flood the land after planting in order to germinate the seed, since the young plants are unable to push through the crust formed by flooding. However, land which it was found necessary to bed may be irrigated in the furrows to germinate the seed.

To guarantee a perfect stand, which is of the utmost importance, from 25 to 36 pounds of seed to the acre should be planted. This amount will give a thick drill of seed. This drill of seed germinating together will greatly aid in breaking any crust and thus do much to insure a good stand. Heavy soil, should, as a rule, have more seed per care than light sandy soil.

CULTIVATION.—As soon as the plants are visible in the rows cultivation should begin. It is very important to cultivate as soon as possible, to break any crust that may have formed and to check evaporation. By shallow cultivation at regular intervals of from 10 to 15 days during the early growing season, the root system will develop better, the soil will be aerated, weeds and Bermuda grass kept down, and less water will b e required.

IRRIGATION.—If the land is level and contains the proper amount of moisture when

Trade G-E Mark



Another Sign of the Times—Better Pumping by Electricity

HERE is one of the finest stretches of macadamized road in California, between San Juan and Hollister. The tank in the foreground—used to supply the road sprinkler—is kept filled by a pump, driven with a 5 h. p. G-E Motor. The motor requires no supervision whatever—starting up and stopping automatically.

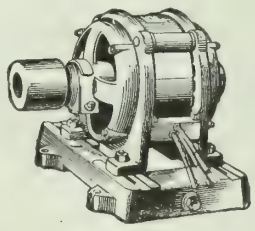
G-E Electric Motor For Ranch Use

Electric pumping, besides the greater safety made possible at no added insurance, can be used to provide cheaper and better irrigation. The average size of a G-E Motor used for irrigating is between 5 and 10 h.p. The cost of operating a motor of this size is only a few cents an hour.

In countless ranching operations the G-E Motor shows a greater saving than any other form of power. The manager of the Malone Co.'s Ranch, Napa, Cal., has figured that he can now crush barley at 60 cents a ton. It cost him $1.75 before he installed a G-E Motor.

The G-E Motor can be used for threshing, baling, concrete mixing, sawing wood, cutting ensilage, etc. And electricity is a wonderful servant in the house for churning, ironing, washing, running a sewing machine and in scores of other ways. Electricity too, supplies the safest, best and most cheerful illumination.

Write today for illustrated booklets about ranching with electricity — they are free.



The General Electric Company will, on request, gladly answer all questions relating to the use of electric power for ranch and market garden irrigation. Write to the nearest office of this Company.

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will comprise one of the most complete lines of agricultural machinery ever assembled. A corps of courteous and obliging representatives will be in attendance to explain in detail each of our products, while our free moving pictures will show them in actual operation.

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Holt Traction Engine Disc Harrows
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The Holt Manufacturing Company, Inc.

STOCKTON, CALIFORNIA

the seed is planted, and intensive cultivation is practiced, the crop will not require any irrigation for six weeks or two months after planting. At the end of this time it should be given a light furrow irrigation, followed by light cultivation as soon as the ground is dry enough to work. In some instances one cultivation after irrigation will be sufficient to mulch the surface thoroughly. If one cultivation does not put the field in proper condition, it should be gone over a second time.

Under ordinary conditions it will not be necessary to irrigate again for three or four weeks, when the field should be given another light irrigation followed by thorough cultivation. This should be sufficient irrigation to last until about July first. However, it may be found necessary to irrigate more frequently on new land, owing to the fact that such land will not retain the moisture so well as land that has been cultivated before. In all probability it will be necessary to irrigate new land at least three times between the date of planting and July first. Certain classes of old land may also require an extra irrigation. Wilting of some of the plants in the middle of the day during early development is not conclusive evidence that a general irrigation is needed.

It is very important that irrigation during the first part of the season be light in order to prevent too rapid growth of the plants. If given frequent heavy irrigations the plants will grow woody and they will be apt to maintain this tendency throughout the season at the expense of fruitfulness. The foundation for minimum sized plants and maximum productiveness will be laid if only sufficient water is given the plants during early development to keep them in healthy growing condition.

THINNING.—Cotton should be generally thinned after the second irrigation and cultivation, when the plants are between 8 and 12 inches high. Cotton planted on land rich from previous crops of alfalfa where the rows are 4½ feet apart, should be thinned so as to have the plants from 14 to 16 inches apart in the row. On new land where rows are 3½ feet apart the plants should be thinned to from 8 to 12 inches apart, depending upon the richness of the soil.

Generally the planter can contract for the thinning or chopping at $1. per acre, which will allow the workman fair wages. The thinning may be done in one operation and for many this will be the more practical way. While thinning in one operation or in two seems to have little effect on the productiveness of the single plant, still the yield of the field may be increased by two thinnings because a more uniform stand will be guaranteed.

If the cotton is to be thinned twice the plants may be thinned after the first irrigation and cultivation to 3 to 4 inches apart in the row. This distance will give the remaining plants room to grow and will insure plants enough to replace those which may be killed during cultivation and irrigation. The final thinning may in this case be left until the plants are larger and stronger than where thinning is done in one operation.

In thinning, it is of great importance that the planter should obtain a uniform stand of plants properly spaced in the row. For example, if the soil is such as to require that the plants be thinned to a distance of 12 inches apart, it is highly important that, as nearly as possible, there be a plant every 12 inches in the rows all over the field.

Cultivation should be carried on as long as it is possible to get over the rows of plants. A riding cultivator which works both sides of the row equipped with sweeps that just cut under the surface gives the best results with the least labor. The soil should be ridged up about the plants just high enough to leave a broad shallow channel for the irrigating water to run in. Ordinarily the plants will have grown to a size to prohibit cultivation by the middle of July. After that time the crop requires no attention, but that for irrigation, until picking time, which begins from the middle to the last of September. It should be borne to mind that the maximum amount of fruit will be set by the minimum amount of water that is required to keep the plant thrifty. The tendency of the average farmer is to do too much irrigating and too little cultivating.

AGRICULTURAL REVIEW.

Grapes and Grape Products.

The raisin output of the State bids fair to be smaller than was thought some time since. The picking has started, and, by tray count, the yield is estimated at from 30 to 40% of a full crop, or an output of about 70,000 tons, which, however, will make a good year, especially with the prices that the Associated Raisin Co. is getting. The Associated Raisin Co. has put up the price of raisins from ⅛ to ¼ cent per pound, the Thompson's receiving the greater advance.

Two lines of Government work to improve the grape-shipping industry are being conducted. C. W. Mann, of the U. S. Department of Agriculture, is at Fresno superintending the packing of raisins in redwood sawdust. Several improvements over last year's work have been found, and this form of packing promises to reach large proportions before long. F. Flossfedder, of the University Farm, has been going over Sacramento valley vineyards selecting vines that have the largest and finest Thompson's Seedless grapes. Cuttings will be taken from these vines later, and thus by selection an excellent strain of shipping Thompson's secured.

It is reported that the Eastern grape crop will be 40% short.

Fresno wineries have started crushing, though work has been going slowly, as most growers have been giving most of their attention to raisin grapes. Some trouble was experienced through many of the grapes being unripe. Wineries elsewhere are operating, or nearly ready to do so. In the Lodi district $10 per ton is offered for grapes, which must test 22% sugar. In Sonoma, offers of from $22 to $25 per ton are reported, and the harvest will soon begin.

An 80% normal prune crop is being harvested from Live Oak, Sutter county.

An estimate of a crop of 40,000 cars of oranges from California for the coming season has been made by C. M. Secrist, Coast manager of the Pacific Fruit Express. The estimate is subject to revision according to weather conditions of the future.

A. G. Schulz, horticultural commissioner of Tulare county, is finding too much of the soft brown scale in some of the older orange groves of the Tulare district. There is no scale calling for artificial control methods in this district, and the one named has been kept down by natural parasites heretofore, but if it continues to increase, it may require fumigation.

Preparations for the Fourth National Orange Show to be held at San Bernardino six months hence have been actively begun.

The California Canneries Co.'s plant at Visalia is running with a payroll of 375 men, women, and children. The season began July 3 and will end about September 21. The output will be a little less than that of last year.

A Willing Worker

SAMSON TRACTORS are built for plowing and cultivating orchards and vineyards and for farms of moderate size. They have proven their ability to do the work at far less expense than with live stock—and the soil is turned to a greater depth.

Fitted with the wonderful Samson Sieve—grip wheels—the tractor works easily in plowed ground or on wet, sticky clay and adobe soils. These wheels and the tractor are described in new catalog—just printed.

Ask for Catalogue I A.

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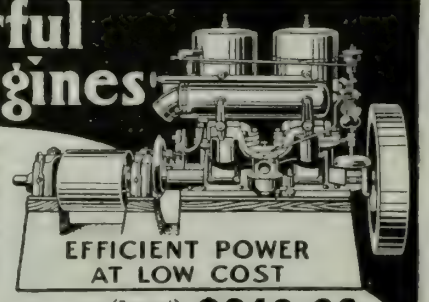
STOCKTON, CALIFORNIA

Big Powerful Irrigating Engines

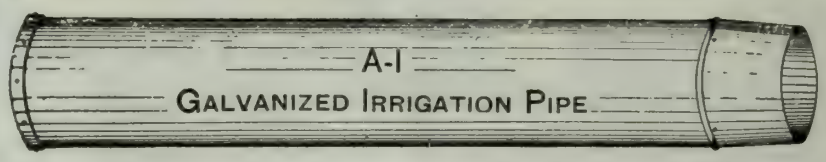


Built especially for long, hard, continuous work. Absolutely dependable; they need no attention except fuel and oil. Automatic throttling governor. Every engine guaranteed.
Also used on tractors and in machine shops and factories—light enough to be easily portable and yet can't be beat for reliability and power. Made in two and three cylinder sizes.

EFFICIENT POWER AT LOW COST

Use kerosene, gasoline or distillate. 12 H. P. Complete (Base not included) $249.00

16, 24 and 36 H. P. engines at comparatively low prices. You will look in vain to find their equal.
Write Today For Our Special Irrigating Engine Catalog
It describes and illustrates this entire line of Gray Engines, and gives you the information you want. State exactly what your requirements are, and your letter will receive the attention of our Special Service Department.
GRAY MOTOR CO., 919 Gray Motor Bldg., Detroit, Mich.



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BECAUSE it is made with a lockseam set down under 3500 pound pressure, which requires no soldering to make it water tight (solder will break loose by jarring and hard knocks).
A-I Pipe was awarded first prize at Fresno and Santa Clara County Fairs in 1912.
Send for new catalog with prices and valuable information.
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As a fertilizer contains Nitrogen, Phosphoric Acid, Potash, creates Humus, is a soil corrector and will assimilate any fertilizing element that may be contained in the soil.
To insure prompt delivery, book your order at once. Write or call on us.
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150,000 PLANTS READY FOR DELIVERY
Genuine Florida sour stock. Sweet stock grown from carefully selected California seed. Clean, Vigorous and Thrifty.
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Chas. H. Harle, Mgr. Correspondence Solicited. Home Phone 497.

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WANTED

MEN WANTED FOR PERMANENT POSITIONS.—Miller & Lux, Incorporated, require the services of a ranch superintendent, an assistant ranch superintendent, a horticulturist, two ranch foreman, a hog man, and two general cattlemen—one for Nevada, and one for California. Only men of wide local experience and with best of references need apply. Send application to Box 11, Pacific Rural Press, stating experience, references and salary expected.

TENANTS WANTED—Miller & Lux, Incorporated, desire to get in touch with men having work stock and capital sufficient to farm 300 acres or more of grain land, on a new area of land being opened up under ditch. Address Box 15, Pacific Rural Press, San Francisco, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

WANTED—Burbank standard cactus leaves; highest prices paid. Address Sempervirens Cactus Farm, Santa Rosa, Cal.

Agricultural college graduate with countrywide practical experience in U. S. Dept. Agriculture, 5 years in Cal., wants opportunity to manage or develop fruit ranch, preferably on a profit-sharing basis. Address Box 10, Pacific Rural Press.

I am interested in 2000 acres of land, very rich soil tested by University of California, situated 32 miles from Mojave, land on S. P. R. R. and only 2 miles from railroad station. I want to get some party who has complete or part complete farming implements to take full charge of place, and will make suitable arrangements with proper party. The place has never been farmed and is in virgin condition. Only want small part cultivated. Write full particulars or call on Harry M. Lichtenstein, 24 Montgomery St., San Francisco.

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Fruit Trees, Berries and Small Fruits; acreage planting a specialty. Roses, Bulbs. Lists ready. H. A. HYDE, Watsonville Nurseryman.

CASH NURSERIES—Burbank cactus a specialty Trees of quality. Sebastopol, Cal.

BEFORE COMMENCING OUR REGULAR SEASON'S advertising campaign, we desire to call the attention of plant lovers, fruit growers and our thousands of customers to the fact that we not only have a magnificent and complete line of fruit and ornamental stocks, but in addition to this will have many novelties to offer which will be worthy of attention. We solicit inquiries NOW and are prepared to offer special inducements on many lines. Mail us a list of your probable wants NOW and permit us to figure with you. Our firm is backed with 30 years of an honorable, straightforward business career and we always have our customers' interests at heart. Our annual ILLUSTRATED PRICE CATALOGUE will be ready for distribution about November 15th. If you are interested let us hear from you. FANCHER CREEK NURSERIES, INC., Box 180, Fresno, California.

LAND FOR SALE.

LAND AND WATER—$100 per acre. Complete irrigation; Sacramento valley, level; 10 to 100-acre tracts; terms; direct from owners. WATT & CO., 621 Jay St., Sacramento, Cal.

FOR SALE—An excellent location for bees and poultry. Located on two railroads in Lassen county. 150 acres with house, barn and other buildings, 30 acres in alfalfa. Several hundred acres alfalfa surrounding within two miles radius. Ranch is fenced. Good water and climate. Price $3500. Address A. G. Evans, Doyle, Cal.

FOR SALE—Alfalfa seed (domestic) crop of '13. Free from noxious seeds. Price 15c per pound f.o.b. Zamora, Yolo county, Cal. Samples on application. Address V. A. Peterson, Blacks Sta., Cal.

FOR SALE—60 acres near Newcastle, Cal.; 12 acres in trees and vines under ditch; 23 acres in Zante currants (my currants took first prize at Seattle Exposition); 7 acres hay land, and 8 acres timber. Good house, barn, chicken house, packing house, etc. Completely stocked with implements, wagons, etc., including a good team of horses and harness. For particulars, price, and terms, write S. Hossli, Newman, Cal.

MISCELLANEOUS

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin, it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco

To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay Ct., San Francisco.

ALFALFA HAY—I have some No. 1 alfalfa, and it will pay you to write me for prices before buying. W. G. COPPERNOLL, Gridley, Cal., R. D. 1.

FOR SALE—175 tons choice alfalfa hay and 30 tons grain hay, delivered on cars at Delevan. Address Reynolds & Smith, Delevan, Cal.

Miscellaneous News Notes.

Last winter the PACIFIC RURAL PRESS published several articles on septic systems and the disposal of sewage on the farm which aroused great interest. The Monthly Bulletin of the State Board of Health for June, which has just been issued, contains a large amount of material on sewage disposal which may prove of value to those who wish to follow the matter up. The subject is discussed from a rather technical standpoint and is also more for small towns than for private plants.

The output of honey from the Imperial valley will be large this year, being estimated by A. F. Wagner, county bee inspector, at 600 tons, or 30 carloads. There are about 15,000 stands of bees in the valley this year, against 3,500 four years ago, the increase during the year being 25%. This season has been very favorable for honey production.

A rice mill will be built and operated within 60 days at Biggs, Butte county, according to arrangements just completed with Charles E. Hale, a member of a large importing and exporting firm of San Francisco. The mill will cost $40,000. The mill company will either buy rice or mill it for growers at small cost.

The rice crop in the northern Sacramento valley is progressing nicely. At Richvale, C. J. Ahlstrom will have about 15 rice-binders in operation within a short time.

The State hospital for the insane at Stockton is meeting with excellent results with poultry. The flock now numbers 5,000 hens and provides nearly all the eggs that are needed. When the hens are laying well there is a large surplus, which is preserved for fall and winter use.

A report from Tulare states that a number of officers of the college of agriculture recently put in a day at the Tagus ranch investigating the prospects for starting a series of experiments on the place by the university.

Two hundred ring-neck pheasants from the State Game Farm at Hayward have been liberate near Fort Jones, Siskiyou county.

A new plan for crop reporting is being tried by the U. S. Department of Agriculture in several of the Middle Western States and will be applied everywhere if successful. Reports are to be telegraphed to a central station on some certain date, and there are summarized and sent out at once, so that papers can publish a statement of general crop conditions within 24 hours after the first one was handed in. According to the present system, or the one recently given up, the reports reached the public too late to be of much use. This method should enable the farmers to get the benefit of knowledge of changes in crop conditions as soon as the buyers of their produce.

Olive growers are coming into their own at this time. A few years ago growers had to accept $25 and $30 per ton, while now the prices run over $100, and from a last week's Oroville paper we learn that one grower there sold his olives at $165 per ton and that other contracts have been made at $150 per ton.

AUSTRALIA

SPECIAL LAND SEEKER'S EXCURSION NEXT NOVEMBER to Victoria, Australia. Early reservation of berths desired. Reduced steamship passages and free rail travel for inspection. GOVERNMENT OF VICTORIA WANTS SETTLERS and offers unusual opportunities. Lands suitable to all requirements, exceptional terms. Free particulars from F. T. A. FRICKE, Government Representative (from Victoria), Box W, 687 Market St., San Francisco.

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These and other legumes are the plants that are making money for many orchardists and farmers when used as

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Some growers get their money back by foraging the crop before it is turned under for the value of its nitrogen and humus.

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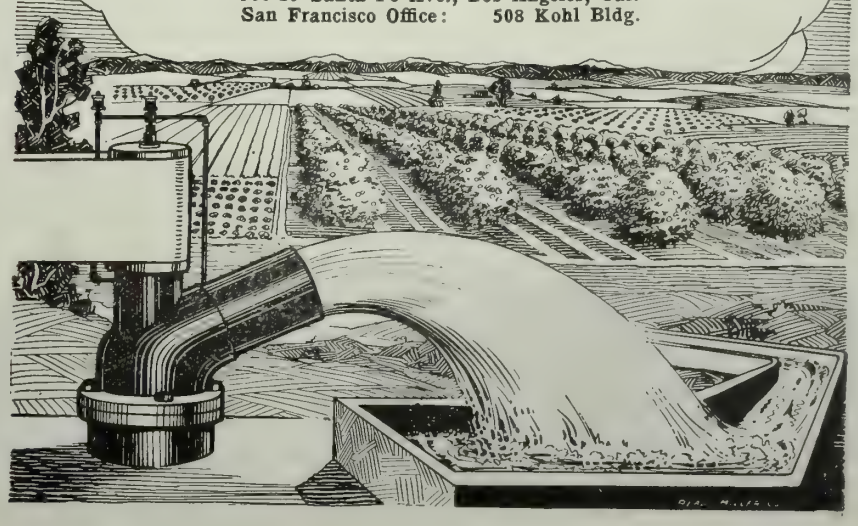


How to Develop Our

[Written for the PACIFIC RURAL PRESS

Holstein-Friesians of J. W. Benoit, Modesto.

Developing the State's livestock resources is one of the big problems confronting the California stockmen today, and one which is receiving the consideration of every wide-awake livestock man.

That the proper solution of this problem will be successfully worked out in time, every one admits, but as yet no definite plan has been outlined to work by, and the story of Oregon's experience along similar lines should furnish food for thought on the subject.

The New Idea.—Several years ago plans were formulated for union stockyards at Portland, and preparations made for starting the same. After organizing, the affairs were put into the hands of a general manager, whose duties were, naturally, to make it a successful undertaking.

The launching of the establishment was comparatively simple, but the management soon began to have real troubles. Quite contrary to usual experience, this was not caused by a limited demand, but rather by a shortage in some lines. Beef and wool sheep could be depended upon in large enough quantities to supply the trade, but the State's supply of pork and mutton sheep was insufficient for the demands of the market. The proposition facing the management was to increase the hog and mutton sheep supply or consider the undertaking a failure.

Surely the task of increasing an entire State's output was a big one for an individual to undertake, but it was finally proved that one live wire with an idea could, through continual agitation and co-operation, eventually gain his point.

Bankers, railroad officials, newspapers, promotion organizations—in fact, all who would give him an audience—were interviewed and advised that more mutton and pork must be produced. Much time was spent in writing articles on the profit of swine and mutton sheep raising, and every source of publicity was deluged with such matter.

Instead of his duties assuming the nature of a manager entirely, they developed into those of a publicity agent as well; but with all of the extra effort, there was still a shortage of pork and mutton. It was evident, at this time, that any increase in producion of pork and mutton depended largely upon the future immigration, for it was the new settler who would most readily adopt advices given.

An Eastern Example.—Instead of spending time and money experimenting with colonization plans, it was decided to interview authorities on the subject in the East, and subsequently a trip was made for that purpose. While there, it was learned that a certain large railroad had achieved considerable success in colonization, and for that reason the president's advice was sought on the matter. It was learned that this company had colonized 40,000 families in three years' time, or more than the Pacific Coast States had accomplished in ten years. Surely the president of such a company could aid in solving Oregon's problem. Through him it was learned that Westerners had an erroneous idea on the subject, and to furnish proof for his assertion, he said: "Shortly after the construction of our road started, we began with our colonization plans, for it traversed hundreds of miles of open country having a scattered population. With this condition confronting us, it was very evident that an increase in rural population was needed all along the line, to put the road on a paying basis. For this reason data were secured which showed that the average farmer changing locations had between two and three thousand dollars. With this capital, land and implements must be purchased, buildings and fences erected, and some crop grown which would yield a quick revenue for maintenance. Instead of advocating the growing of fruit, as you Westerners do, requiring several years to realize returns, we urged settlers to grow agricultural crops and livestock, for almost immediate returns can be realized from these. Results show that our plan was a logical one, for the earnings of the road have been very satisfactory since colonization started. The literature sent out from the Pacific Coast States places special emphasis upon the fruit-growing possibilities, but doesn't dwell upon your other resources to any extent. It is true those colonists who have more than the average amount of capital are attracted by fruit culture, but the multitudes with small capital cannot purchase high-priced land and wait for it to begin producing. If, however, these people were informed that there are other profitable resources, such as livestock and agricultural products, your immigration problem, and incidentally your meat shortage, would be solved."

Profiting by Others' Experience.—The logic of this argument appealed to the troubled manager, and in turn to the head of a large Western railroad, bankers, and others who had previously lent their support. With the efforts of these combined forces came a new era in colonization plans. Everyone began to see the need of more livestock, newspapers and promotion literature advocated it, speakers at banquets and public gatherings dwelt upon it, even preachers used it as an argument in their sermons and bankers mentioned it in their business correspondence. Everywhere the opinion prevailed that Oregon was the one place to raise livestock of all kinds, and particularly mutton sheep and hogs.

Again this colonization plan has proved a successful one, for Oregon's livestock industry has grown at a rapid rate since its introduction. In fact, the valuation of pork products alone for the year 1912 in Oregon and two sister States which were greatly aided by Oregon's campaign, was $12,000,000 more than those in the same States during 1911, which shows that more immigration was the cure for the livestock shortage of a few years previous.

The California Situation.—California is today facing the same problem that Oregon did several years ago, and it would seem that their solution would prove beneficial here.

Quartet of Serviceable California-Grown Horses.

Our growth, while remarkable, has not been along stock lines; we have lived in a fruit atmosphere which, though aiding the horticultural growth of the State, has not greatly benefited the livestock industry.

We, like Oregon, have carried on colonization plans in a large way, but have unconsciously given the impression to the prospective colonist that our fruit-growing business was the most promising of the State's resources.

The average California resident knows this condition is not true, but, as the Eastern railroad manager said, the multitudes with from $2,000 to $3,000 do not, and as a consequence the livestock growth of the State suffers.

There are innumerable instances that afford justification for this conclusion, one in mind being the Panama-Pacific Exposition to be held here in 1915. This is considered the greatest opportunity that has ever been offered this State for

Livestock Industry.

By J. C. LOOMIS.]

development purposes, as prospective settlers will visit us from every known country at that time. It was for this reason that it was deemed advisable to erect a building to be devoted to California county exhibits showing the wonderful possibilities offered in the State. To cover the cost of this building, floor space was rented at $2.50 per square foot, and some counties have invested as much as $25,000 in this way. These rentals are to be paid for by special tax levies upon property owners. Unquestionably, these exhibits will be of great value to the horticultural and agricultural interests, but it is doubtful if they will materially aid livestock development, as even those counties which are, strictly speaking, livestock localities, are preparing to make a display of horticultural and agricultural products, but are sadly neglecting any promotion along livestock lines, when the latter would be far more representative of their county.

While it is true that provision is being made for a world's display of livestock, this, like the main horticultural exhibit, will not afford opportunities for promoting local livestock interests; therefore it would seem that those counties interested in livestock raising should lend some financial support to a local showing of that kind.

A short résumé of our opportunities may strengthen the above contention and serve to furnish data for future work.

The Horse Outlook.—At the present time the valuation placed upon horses in California is more than that of any other farm animal we raise, and they are yearly growing numerically stronger. This condition has been brought about through past agricultural development, an increasing city market for heavy drafters, and a growing export business, and the future prospects are very bright for the breeding of certain types. Emphasis should be placed upon the type, however, for the future horse in California must be better bred than heretofore. Any of the heavier breeds find a good market, for our city buyers yearly import large numbers of heavy horses, claiming this State's output will not supply their needs. It will take some time for this home demand to be supplied, and when this condition is overcome the grower will have little difficulty in finding an outside market, as every State is now facing a draft-horse shortage.

The natural advantages California affords in the way of climate and feed are nowhere excelled for the raising of horses, and it should be one of the greatest stud-farm localities in the world.

Last year our importations for breeding stock amounted to over $1,500,000, which should have gone to California breeders had they such stock to sell.

The fact that the average valuation of California horses was placed at a lower figure for 1912 than for 1911 indicates that well-bred drafters and not smaller horses should receive the farmers' future consideration.

The Beef Cattle Situation.—Having always been one of the greatest range cattle States in the country, one might suppose that future development along beef cattle lines was most unlikely. Quite the contrary is true, however, for with a State and world-wide meat shortage facing us, the cattle situation is becoming of prime importance.

Hog Ranch Near Princeton, Colusa County.

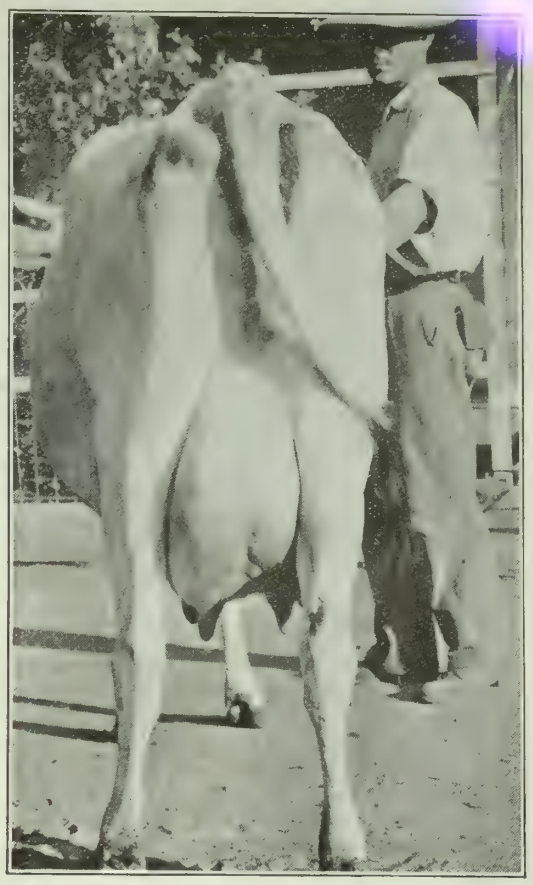
Heretofore our beef supply has been comparatively simple, as we have had large areas of range land which supplied large quantities of cheap feed, but these ranges have yearly been cut down as the land became more valuable, and at the present time our imports are growing larger and our exports smaller, indicating that the State's demand will soon overtake the supply. There are two factors which should have a controlling influence on this problem; they are better bred stock and alfalfa, and these in connection with proficient management should discourage any fear of beef shortage in California, and at the same time add millions to the State's wealth.

We already have large areas of alfalfa, but there are thousands of acres still to be put under cultivation and irrigation which will furnish cheaper feed than any other State now has.

At the present time better bred stock is the most startling need, and though that kind of stock is increasing yearly, much of our range cattle need a great deal of improvement in this respect.

With more settlers to raise alfalfa, and with better bred cattle to consume it, our State should be a leader in beef production, and the prospects are most promising for that condition at the present time.

Sheep Prospects.—This branch of the livestock industry has, like beef cattle, been dependent to a large extent upon range conditions. It is due to this fact that sheep-raising is undergoing a marked change in methods, the growth of which is hard to foretell. Heretofore the industry has been carried on almost exclusively in districts where cheap valley lands afforded winter feed and the higher mountains summer feeding.



Udder Development of Jersey—N. H. Locke Co., Lockeford, Cal.

Through the rise in value of the lower lands and the cutting up of mountain ranges, sheep-raising from now on will be carried on more extensively in alfalfa and grain-growing sections.

Although our wool production last year was smaller than it has been since 1868, the total number of sheep in the State is nearly as high now as at any time since 1896, and the average valuation is higher now than ever before.

This shows that the production will not decrease with the State's development, for with higher mutton prices and a satisfactory wool quotation, it will be possible for sheep-raising to be profitable for the smaller farmer, as has not heretofore been the case.

The present export demand for mutton sheep is increasing as well as our home market, being influenced largely by the shortage of other meats. In undergoing this change of methods, the needs are similar to those of all other classes of livestock, inasmuch as better bred sheep are badly needed at this time.

A good start has already been made by some of our sheep breeders to aid in bettering the quality grown, and a little education along Oregon lines should be all that is necessary in keeping California in front rank as a sheep State.

Swine Growing Opportunity.—The percentage of pork imported for consumption is greater than that of any other farm animal, and this, in face of our State having large possibilities in this respect, demonstrates that we need badly the services of our friend, the stockyard promoter.

Swine, unlike cattle or sheep, are raised more or less extensively by all classes of farmers, and as a by-product have proved second to none for profit, and also affords the new settler a means of starting his income in less time than almost anything he can enter into.

The past objection of not being able to grow corn for feed has been overcome in most locali-

ties, and today there are a great many proved districts that have been found capable of producing good corn in fairly large quantities.

There are good reasons to suppose that this condition will continue to improve, for with the growth of alfalfa and the dairy business, the necessity of rotation is becoming more pronounced, and corn fits into this scheme better than most other crops.

Some improvement is needed in our methods, in order to meet the market requirements, but the great problem with hogs, as with other branches of livestock raising, is based almost entirely upon the raising of better stock, for that means more money to the grower, and, as a consequence, more growers.

The packing-house requirements would also be met with better bred stock, and instead of importing twice the amount of pork we consume, our production would be built up to the State's demand. Oregon needed more hogs, and so does California.

THE DAIRYING FUTURE.—With the vast development of irrigable lands, dairying has grown faster in recent years than any other branch of the livestock industry. Nowhere are natural conditions so favorable for the milch cow as in this State, and in the face of adverse publicity it seems remarkable that so much has been accomplished.

It is due to the enlargement of this enterprise that $32,000,000 was disbursed to California farmers last year and that there were 1,500,000 milch cows, with a total valuation of over $42,000,000, at the beginning of the year 1913. These figures denote that dairying is one of our most promising resources, especially since neither our markets nor available lands have as yet been anywhere near developed.

Our butter and cheese production are still insufficient to supply the demand, the latter shortage being more pronounced. While we import some butter, the export business is annually increasing and new markets are being opened.

As a breeding center for pure-bred dairy cattle, every indication now points to this State being a leader, and no other country offers better facilities for that branch of the industry.

At present the average butter-fat production per cow is figured at about 150 pounds per year, due largely to the poor grade of milch cows used. By having the greatest of cheap feeds, alfalfa, and through the use of well bred sires, the future dairyman will very likely increase this average production considerably and will also hold out inducements for the above-mentioned multitudes who can through dairying realize speedy and substantial returns.

A STEP IN THE RIGHT DIRECTION.—In the above, several factors have been pointed out, with the object of showing that our problem, like Oregon's, is a large one, and that an organized effort is needed, not only for the future welfare of the stock interest, but for the entire State as well.

Our immigration methods no doubt need readjusting, for the need of more farmers who will raise more livestock is very evident at this time. At present steps should be taken by every livestock man in the State to start an educational campaign showing, if necessary, bankers, politicians, promotion societies, newspapers, and others what the livestock situation is today and should be in the future.

As the stockyards manager found that those most vitally interested must be aroused before any widespread interest could be hoped for, it would seem that breeders themselves must be awakened to the opportunities presented.

No other class of stockmen are more interested in developing the industry than pure-bred stockmen, and during the coming week the State Fair will be headquarters for most of them. A general discussion at this time of what is most needed and how best to obtain it might be satisfactorily worked out, and is surely worth an effort.

California's livestock growth is too far advanced to stop where it is at present: resting simply for the want of organization and publicity. Speaking of publicity, which means recognition, the fact that each year thousands of dollars' worth of pure-bred stock passes through California from the East for foreign shipments indicates that as a State California is not recognized along stock lines.

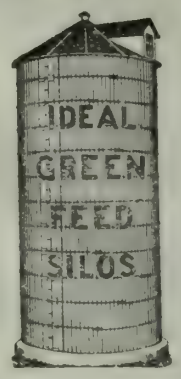
It is to be hoped that stockmen here will see the railroad president's logic when he said: "You are on the wrong track for immigration."

GETTING ALFALFA STAND ON BLOWING SOIL.

A great many people have been troubled a good deal through the Fallon Project, in the sections where the soil was light and sandy, by having the wind blow out their alfalfa seed.

C. L. Clark, of Fallon, gives the following method that has worked very successfully. As the damaging winds all come from the west, he advises starting in at the extreme western end of the piece of land to be planted. Instead of burning the brush, clear off enough land to make one check and pile the brush up at the west end for a wind barrier. This will keep the wind from blowing out the first check, leave the brush on the next check and clear off for the other one, and so on. Next year if you have succeeded in getting a start, grub out the alternating checks and plant. The stand of old alfalfa will keep the wind from having very much force.

Ideal Green Feed Silos



Now is the time to erect your silo and be prepared for any shortage of feed or burnt out pastures during the coming year.

See our 14x30 silo set up complete at the California State Fair, to be held at Sacramento Sept. 13 to 20.

We will also show Ensilage Cutter in operation, along with our new up-to-date Alpha Gasoline Engines. Also the improved type of De Laval Cream Separator, James Barn Equipment and Edison complete storage battery lighting outfit in operation.

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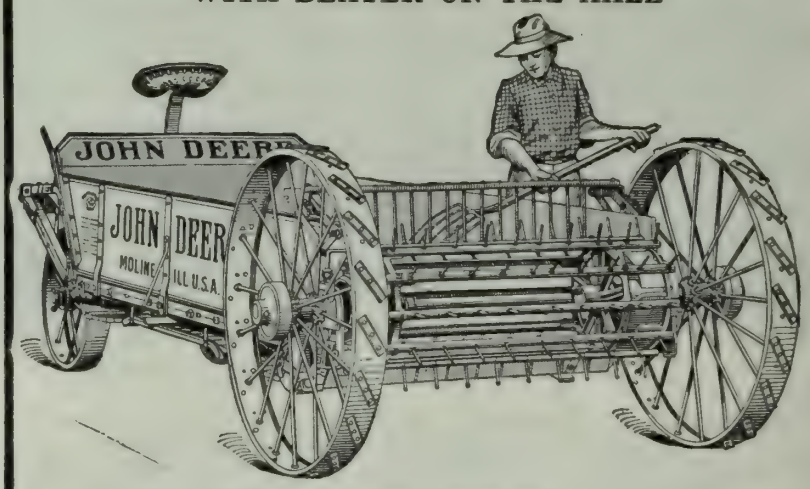

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It spreads from 5 loads to 25 loads to the acre, as you like—by a simple movement of the feed-lever *operated from the seat.*

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It is *efficient, light draft, economical, easy to load* and quick to unload; durable and dependable.

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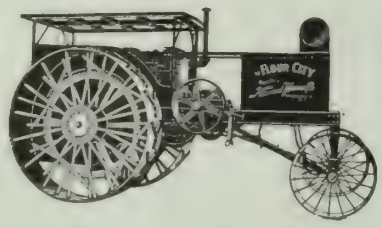

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EUCALYPTUS STOCK FARM—Registered Duroc Swine and Holsteins; prices right. J. K. Fraser, Denair, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroghbred Berkshires.

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FAIRVIEW STOCK FARM—Reg. Poland-China hogs. W. A. Young, Lodi.

CHAS. GOODMAN, breeder of High-Class Berkshire Swine. Williams, Cal.

E C. RAND—Registered Berkshires. R. 3, Box 69, Santa Rosa, Cal.

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RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

FOR SALE—Two pure-bred Jersey bulls (unregistered); one dark fawn, the other light fawn colored. Price $50 each. C. Booth, Alamo, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CHAS. L. LEONARD, Jacinto, Glenn Co.—Registered Jersey service bulls, sired by Gerties Lad, Gerties Son, and Melias Fox, for sale.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

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WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

MINOR & THORNTON, Breeders of Reg. Holstein-Friesian cattle. Kearney Park P. O., Cal.

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REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

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SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

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HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

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PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

WITH THE LIVESTOCK MEN.

The Visalia Co-operative Creamery is now making about 2,500 pounds of butter per day and reports the demand is increasing, mostly from the Los Angeles market.

In order to have a strictly dairy cattle authority to do the judging at the State Fair, the services of Prof. O. E. Reid, of the Kansas Agricultural College, have been secured.

In face of the dry year experienced by dairymen in Kings county, two creameries in Hanford have made a daily average of 4,247 pounds of butter during the month of August.

Dr. Megowan, food and market inspector of Sacramento, has entered complaint against Miller & Lux of San Francisco, charging them with selling sausage overcolored with coal-tar dyes.

The first shipment of sheep for the season was sent East from Winnemucca during the week. There were 17,500 head in the lot, which is only a forerunner of the many to follow from that region.

McAlister & Son, of Chico, report that the demand for pure-bred Holsteins in southern California has been very good this summer, and that they expect to go East this fall to purchase additional stock.

Official testing was started this week by J. W. Benoit, the Holstein breeder of Modesto. He writes that five cows will be put on test at the present time and some good records are expected as a result.

H. L. Murphy, of Perkins, writes this office that he will show 12 Berkshire hogs and one Short-horn bull at the State Fair. This is 49 years that some of the Murphy family have exhibited at the State Fair.

Two large silos are being erected by the Cooley brothers of Durham, Butte county. These are the first to be built in that locality and show that better dairy methods are to be found there from now on.

The great land-owners, including many of the big lumber companies, in Wisconsin, are offering 3,000,000 acres of rich pasture lands at nominal charges to the cattle raisers of the drought-stricken Southwest.

The advanced registry records furnished by the Ayrshire Breeders' Association show that the Ayrshire breed is making large strides in milk production. The average production for the last cows reported on, over two years old, was over 11,000 pounds of milk and the test is also gradually becoming higher.

SHEEP.

FOR SALE—85 highly graded young Shropshire ewes; two thoroughbred rams. Perkins & Co., Perkins, Cal.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMPLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Jersey cattle, Poland-China hogs. Young stock for sale. Chas. N. Odell, Prop., Modesto, Cal.

BRAE BROOK COLLIE KENNELS—Line bred tri-colors. Working prize stock. R. F. D. 69, Santa Rosa, Cal.

JERSEY CATTLE, DUROC JERSEY SWINE. Mossdale Farm. J. E. Thorp, Stockton, Cal.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-Horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

T. D. Carneal shipped last week from Livermore two carloads of Devon cattle that brought an average price of $62.25 per head. This breed seems to be especially fitted for hilly country like that around Livermore.

The annual convention of the California Creamery Operators' Association will be held at Tulare, November 6, 7, and 8. It is expected that the State Dairy Association will want to hold its meeting at the same place and time.

U. G. Strader, breeder of Dutch Belted cattle, of Ceres, writes that a good-sized herd of his stock will be exhibited at Sacramento during Fair week. This stock always attracts considerable attention, as they have been very uncommon on this Coast heretofore.

While on a tour through Tulare county, John Hilton of the U. S. Department of Agriculture, is reported as having stated that he considers Tulare a remarkable dairy country and the methods used equally as good as are to be found anywhere in the country.

The senior two-year-old heifer, Aggie Acme of Riverside 2nd, 164467, owned by A. W. Morris & Son, of Woodland, has just completed an official seven-day record of 321.5 pounds of milk, 11.33 pounds of butter-fat. The Merci Ranch at Modesto has also had four cows in the official tests recognized by the Holstein-Friesian Association.

It is estimated that 50,000 head of beef cattle are being pastured in Imperial valley this year which will yield a net profit of $25 per head to the cattlemen and nearly the same amount to the landowners. Fat cattle are being shipped out in good-sized lots at present, and these shipments are expected to be much larger during the next few weeks. It is believed that the coming season will show a gain of from 20 to 25% over the past season, one man being expected to bring in 12,000 range cattle this month.

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Spring or Fall Freshening.

Probably a hundred cows come in the fall or early winter in California rainfall dairy districts, now where one came in 25 years ago, but there is still occasion to consider the question in parts of the State where fall and early winter grass may be depended upon. The matter is reviewed by Fred Weir, manager of the Cow Testing Association at Chehalis, Washington where conditions somewhat resemble those of our upper coast region. Mr. Weir writes:

A dairy cow in order to be profitable should do good work ten months out of the year. Under the common system of having the herd fresh in the spring, with no special provision for green feed to carry the cows through the summer, they will not do good work more than five months out of the twelve.

The fall freshening cows after producing through the winter months freshen up on spring grass, and will, if they are good cows, continue to milk until July or August. Instead of encountering a blighting famine three or four months in their period of lactation, which greatly retards or entirely checks their production, they meet with stimulus at this period of production.

Actual Tests.—The results of the herd test may again be referred to as proof of these statements. The testing for object in view was mostly done between May 1st and August 31st, one association being tested the first of October. At this time of the year, considerable length of time fresh, the fall and winter herds may be expected to show up badly in comparison with spring freshening herds. Such, however, was not the case. The first association was tested between May 1st and 16th. The highest producing herd in this association was a herd that had been milking seven months and twenty days on the average. The herd was turned dry in August, when most of the spring herds were turned dry. The other associations tested between June 24th and July 4th. The second highest producing herd was a fall freshening herd. The same was true in another association tested between May 28th and June 15th. The records show that fall and winter freshening herds generally hold up well through the spring months. The time which they produce prior to the freshening of the spring herds is that much gain. Were it not for the hot, dry summer months, the spring freshening herd would continue to milk after the winter freshening herd had run its course, thus making as many months to its credit. The spring freshening herd will not go dry because they have been milking a long time—they will go dry because feed has gone dry, because flies were numerous, and the farmer, busy with the harvested crops, has little time to devote to the attention of the herd, but, whatever might be done, the spring freshening herds, as they are commonly handled, continue but little further into the summer than the herds coming fresh in the fall or winter.

Higher Priced Product.—Another important consideration is the relative price paid for butter-fats in the spring or flush season of the year, and that paid during the fall and winter. The market quotations published in the biennial reports of the United States Department of Agriculture, covering a period of four years, show a sharp decline each year in the month of April, when prices drop from the thirties into the twenties, finding their lowest level in either April or May—either 26 or 28 cents. Prices during the three heavy months of April, May and June, average close to 27 cents, while for the other nine months they average 35 cents.

To summarize, the spring freshening herd does good work for a short time, while butter-fat prices are at their lowest, and must be cared for several months in the year without return. While the fall or winter freshening herd milks a longer time with fat prices at their highest. The short non-productive season coming at a time during which it is hard to produce succulent feed and during which the harvesting of crops commands attention.

WILD HORSES IN CANADA.

It seems that Canadian settlers are having trouble like that which has cropped out lower down on the coast.

The Minister of Agriculture for the Province of Alberta has urged upon the Dominion Government the necessity of some steps being taken to put a stop to the depredations of wild horses in the Peace river country in Western Alberta and eastern British Columbia, which has been one of the principal pioneering sections of this part of Canada during the past few years. He states that wild horses have made raids upon the ranches of new settlers, killing many of the domestic horses and leading away a number of well-bred domestic mares, which have been imported at a considerable cost and which are one of the principal assets of the new settler.

According to Ottawa statistics, these horses are supposed to be descendants of horses abandoned during the gold rush to the Yukon Territory in 1897-98. From the Bow River westward these animals have raided the ranches of the settlers as far west as Kamloops, and the contractors on the Grand Trunk Pacific Railway have as well as suffered losses of imported animals used on the construction work of the road.

The Anton Della dairy at Porterville has been sold to W. A. Parker and G. A. Hunt. The sale includes 42 head of dairy cows and other dairy equipment.

REGISTERED POLAND-CHINAS
(Large Type.)

Royal, Orient, and Chief Price blood. 3-year-old herd boar, Young's Wonder, and fine young stock for sale.

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Pills may be used in any injector, as Cutter's is simplest and strongest.
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Insist on Cutter's. If druggist doesn't stock, order from Laboratory.

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The old reliable remedy for curb, splint, bone spavin, ringbone, spavin or other lameness. 38 years of remarkable results. $1 a bottle, 6 for $5. At all drug stores. Ask for Free Book, "Treatise on the Horse."
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READY FOR IMMEDIATE DELIVERY

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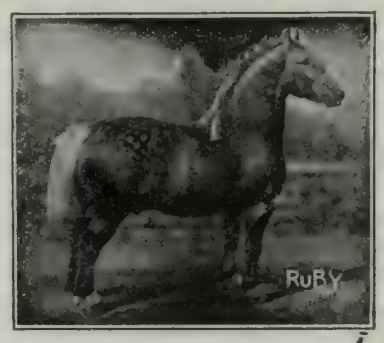

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We have a large shipment of Percherons, Shires, Clydesdales, Belgians, and Hackneys now en route from Europe which will arrive at our establishment about September 10. This is an exceptionally fine lot of horses, and it will pay you to see them before purchasing elsewhere.

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MODESTO ALFALFA MEAL
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CATTLE POULTRY SWINE
FOR PRICES SEE OR WRITE
THE GRANGE CO., Modesto, Cal.

Breeders' Sales.

We wish to call the attention of purebred live stock breeders to this column. Sales of purebred stock of all kinds will be reported here, free of charge, providing we are supplied with the animal's name and registration number, buyer's name and address. Below are the sales reported since our last report.

HOLSTEINS CATTLE.

Floribel Farming & Cattle Co., Hardwick, sold bull, Floribel Prilly Gelsche DeKol 102676 to Frank Myers, of Angiola.

J. W. Benoit, Modesto, sold one bull, to B. A. Goodwin and son, Ripon, two bulls to C. M. Maze, Modesto.

A. W. Morris & Sons, Woodland, sold two heifers and one bull to C. A. Hufford, Millville.

J. McAlister & Son, breeders, Chino, sold to Harry Johnson, Artesia, two bulls; Arden Dacry, El Monte, one bull; H. Van Blondin, Pasadena, one bull; Bixby Land Co., Long Beach, five head; San Pedro Creamery, San Pedro, one bull; James Dulon, Laws, one bull.

JERSEY CATTLE.

L. J. Dobler, Turlock sold bull to William Schmidt, Turlock, bull calf to John Holgate, Turlock, bull calf to Paul Earlson, Turlock, bull calf to J. L. Curtis, Turlock.

SHORTHORNS CATTLE.

H. L. Murphy, Perkins, sold two bulls and two heifers to J. R. Hunt, Millville.

Wm. Bond, Newark, sold bull calf, Newark Perfection, 372,089 also young bull Professor Hunt, to H. L. Murphy, Perkins.

BERKSHIRE SWINE.

Clausen and Peterson, Black sold boar, sired by Silver Tips Duke, to L. A. Miller, Newman also.

POLAND CHINA.

D. F. Conant, breeder, Modesto, sold to F. C. Nickerson, Modesto, one boar; C. H. Bonham, Modesto, one boar; E. H. Cornwell, Modesto, two sows; Claud Harris, Modesto, one boar; Frank Higgins, Modesto, two sows.

TREATMENT FOR PIN WORMS.

J. V. Volkerts of Fallon, Nevada, gives the following cure for pin worms that trouble the stock there a good deal. Slack a lump of lime in water over night in sufficient water to thoroughly slack it, and have enough left to fill a quart measure. Pour water off next morning and dissolve enough salt in the water to make a good, strong brine. Inject in the rectum by the use of a syringe. This has given best results as the pin worms are all in the lower end of the bowels, and medicine applied in the mouth looses practically all its strength by the time it reaches the worms.

JERSEY RECORDS IN STANISLAUS.

D. F. Conant, of Modesto, writes that he has sold a number of purebred swine, stating that some bought to get a start, others bought boars to go with grade sows, which goes to show that the farmers are waking up to the idea that it is just as necessary to have a purebred boar at head of herd of hogs as it is to have a purebred bull at head of herd of cows, for a well-bred hog is ready for market two months earlier that a scrub. The Jerseys are also doing fine, Victor's Lady Kate 218118 and Victor's Lady Dolly 237739 having just finished an official test, for the year ended in May, with 536 pounds 11 ounces of butter and 490 pounds 7 ounces butter, respectively, entering the register of merit with a good bit to spare. Victor's Lady Dolly was with first calf. Have six more to finish test. My future herd bull, Pansy's Gertie Lad 104963, now twenty months old and sired by Gertie's Lad 70050, is developing fine. I might state that Kate made her butter in 309 days and Dolly in 322 days, but is called a year's work. Take the average for butter-fat last year, and the value of the two calves, I would like to ask the nonbeliever in purebreds what these cows are worth, compared with the average grade.

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the use of a Hercules Stump Puller. Bumper crops instead of stumps. Big money in place of taxes. $1,200 from 40 acres the first year--$750 in extra crops every year after. Get the catalog of the

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SPECIAL ALFALFA DRILL
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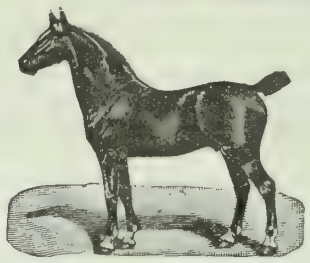

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I have used GOMBAULT'S CAUSTIC BALSAM for ten years; have been very successful in curing curb, ringbone, capped hock and knee, bad ankles, rheumatism, and almost every cause of lameness in horses. Have a stable of forty head, mostly track and speedway horses, and certainly can recommend it.—C. C. CRAMER, Training Stables, 990 Jennings Street, New York City.

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CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
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Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

Look us up at the State Fair and let us get acquainted.

OAK GROVE DAIRY FARM
Woodland, Cal.

Talks on Rabbits, Their Care and Breeding

[Written for the PACIFIC RURAL PRESS by Mrs. SUSAN SWAYSGOOD.]

While this is rabbit talk, I want to say that my information is all from outside sources as I am not experienced in these furry pets. But I have taken pains to secure my information from reliable sources so that our readers can depend upon it being correct, with a little difference as to locality, perhaps.

DIFFERENT BREEDS.—The breeds that are most popular in California are the Belgian and Flemish. From a breeder of the Flemish I am told that marketmen pay a higher price for Flemish, even as much as two cents a pound, and as they are much larger than the Belgians this counts up. Then again they grow faster, and of course this means that the meat will be more tender, for an animal that grows fast is always better eating than a slow growing animal.

BLACK FURS BRING BEST MONEY.—The fur of the Flemish is much more valuable than that of other breeds because it can be made up into ladies' winter garments. A full grown black pelt will bring from 75 cents to $1.25, but of course they must not be torn in the skinning. Belgian and other pelts sell for 30 to 40 cents each, while moist. As fur bearing animals are getting scarcer every year, it sounds reasonable to me that the rabbit having the biggest body and best coat on it would be the best to raise.

RESTAURANTS LIKE BIG RABBITS.—A rabbit that weighs from 10 to 12 pounds is in favor with the big restaurants that cater to the rabbit eating public. And as the price paid is usually from 10 to 12 cents a pound for the meat, rabbit and hide counts up fairly well.

DIFFERENCE IN COST OF PRODUCTION.—Breeders agree that the Flemish eat more than the Belgian; that is only a natural sequence because fast growing animals must eat or they could not grow fast. It is the capacity to use up a lot of food that causes them to grow faster than others.

BELGIANS FOR NURSES.—Some breeders while they keep both varieties, use the Belgian hares as nurse does for the Flemish. They claim that the foster-mother eats less than the real mother, and is more kind and attentive to the young ones.

From a bulletin issued by the Department of Agriculture, I find the following: "The Flemish giant, owing to its greater size, is preferred by some, but the meat is coarse. The Belgian is one of the best, if not the best, for table use. The Flemish giant is a Belgian hare bred exclusively for large size, but with the result that the meat is coarser and less delicate in flavor."

Now as this fact is brought out by those who know, and have nothing to sell, it will be easy to choose which variety would be most popular in any given locality. Anyone intenuing to go into the rabbit business could go around among the restaurants and market men and find out for himself which variety was called for. This is the only safe and sane way to go into any business, because if you don't produce what the people want, they simply let you keep it all yourself, and that does not pay.

SELECTION OF STOCK.—If one breeds rabbits for food only, leaving out the show business and extra care for especially good fur, the selection of stock is of less importance. All that is required is a good-sized animal that is healthy, and from a good hardy stock. But it is always cheaper in the end to buy pure-bred stock, because then you can sell breeders.

COLOR.—Belgian hare fanciers prefer to have a rather deep reddish brown. But the chief requisite is that the color be even, or as uniform as possible throughout the upper surface of the animal and that the fur shall have a rich lustre. The "ticking" or shading should be wavy rather than dotted. The belly and lower surface of tail and hind feet should be whitish, but not pure white. The neck and breast are somewhat lighter in shade than the back, but not in marked contrast to it, nor should the change in shade be too abrupt.

EARS.—The ears of the mature Belgian should be about 5 to 5½ inches in length, varying in size with the size of the animal. They should be well shaped, strong at the base, and almost transparent at the middle. They must not be pendulous, but should, when the animal is quiet, be inclined backward, resting straight over the shoulders. A narrow black edging at the tip and as far down the front and back as possible marks the best specimens.

AGE OF BREEDING STOCK.—The beginner should always select mature animals, about a year old, for breeding stock. These may be known by the brisk, alert look, the small white teeth, and the small claws, almost hidden in the fur. Coarse long claws are a sure indication of age. Avoid listless looking, rough-coated or pot-bellied animals, having the whites of the eyes stained yellow. A hutch rabbit in good health is gentle, neither savage nor over-timid, and does not scream when lifted by the ears—which, by the way, is the proper way of lifting rabbits. The does may be from one strain, even from one litter, but the buck should be from a different stock, and when possible from stock not mixed with that the does are chosen from.

HUTCHES AND PENS.—The Belgian hare does not do well when kept in open warrens. When turned out to shift for themselves they soon fall an easy prey to their enemies and disappear in a short time. There are two ways of managing them successfully: (1) entirely in hutches or (2) in outdoor fenced runs, or courts, with hutches for does when having young, and sleeping hutches for other breeding stock. The hutch system with various modifications is the more common. I know one party that keeps a large number of the Belgians in hutches that are raised one tier above another until the feeder must stand on a step-ladder to reach the top tiers to feed and care for them. This is not done to economize space exactly, but to save time and labor. There are two sets of hutches; one set faces the east and the other the west, and both sides have an awning to keep the sun from striking directly on the rabbits. But for breeders the small runs would be fine, as it would give the animals healthful exercise. Or if a barn or shed be vacant, they could very easily be turned into a good rabbitry. The ventilation must be good, also the light, but there must be no direct drafts on the animals.

FEEDING.—The rabbit thrives well on any kind of vegetable food, but a variety is best. Oats are the best grain food, and hay of nearly all kinds, provided it has been well made. In California there is no trouble in finding an immense amount of cheap rabbit food all winter, such as turnips, beets, mangels, and cabbage. The rabbits should be fed twice daily, that is, for ordinary stock; suckling does should have a noon meal or be fed more than they will eat at the morning feeding. The general rule is to feed only as much grain or green stuff as the animals will consume, but hay should be available at all times. Some of it will be eaten and the rest will make litter. There is no exact rule as to quantity to feed, as some animals eat much more than others, and the appetite varies. Observation will prove the best guide in feeding. Overfeeding is a more prevalent mistake than underfeeding.

CORRECTIVE FEEDING.—Occasionally a warm mash of cooked potatoes or alfalfa

Hopland Stock Farm

We have available for service nine selected well bred registered Short-Horn Bulls. Also four registered Holstein Bulls whose dams are excellent milk producers. These are also ready for service. Write for prices.

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THREE FIRST PRIZES AT STATE FAIR, 1912
Herd Boar, Modesto King, out of Colorado King and Helen Blazes V.
Show stock and fine young stock for sale.
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(See me at the State Fair.)

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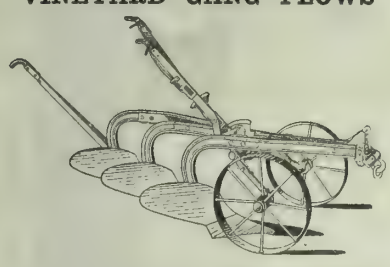

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leaves and a little bran mixed in with a little sulphur may be given as a corrective to loose bowels. In warm weather fill up the water pans twice a day; in winter when it is cool if green feed is plentiful they will need little or no water. Suckling does, or does about to have young, should be given milk diluted with water. A piece of rock salt kept in each hutch saves the trouble of giving salt in feed. Rabbits under three or four months old should be limited in the amount of green feed. If allowed too much they are apt to become "pot bellied."

When a young rabbit is seen to grow big about its belly, the use of green feed should be discontinued and the animal given plenty of exercise. Under such treatment it will soon recover, but if the green feed is continued, the disease usually terminates in convulsions and death. Old rabbits are not subject to this trouble.

There is so much more to be said on the rabbit question that we will have to leave it for another paper. Like all other business enterprises, it needs study and a full knowledge of local conditions. So far as the district around Pomona is concerned, those engaged in raising rabbits appear to be well satisfied. I have interviewed several of them, and they say the business pays.

LAUGH AND GROW FAT.

The following taken from Hearst's Magazine counts one for the women:

Robert Bridges, Great Britain's recently appointed poet laureate, relates what he heard at an old English toll-gate when two old ladies came up. "How much is the till£" asked one of the keeper. "One shilling for a man and a horse." "Get out of the way, then; we're two old women and a mare. Get up, Bessie!" As the two old women—and the mare—went flying down the road, the old man simply exclaimed: "I say! Them suffragette hussies!"

ONE TO THE FARMER.

Secretary David F. Houston says: "It seems to be the fashion for everybody to declare that the high cost of living all goes to the farmer. We hear about his extravagances in automobiles, player-pianos, college education for his sons and daughters, etc. I am afraid there is far more accuracy in the picture painted by the story I heard a few days ago than in all this talk of rural luxury and opulence. A city chap who thought he would like to try his hand at farming obtained work on a farm in western New York during the harvesting season for his board. The first morning when the farmer called him it was so dark and frosty that he could not resist another snooze, and by the time he was out in the field ready for work the clock was striking four. 'Fine morning,' he said, somewhat drowsily, as he commenced his duties. The farmer glared at him through the dim light of morn: 'It was!' he said."

DEPTH OF ROOT PENETRATION.

To the Editor: I noticed in the issue of September 6th a note on depth of grain roots. I tested cowpeas some time ago by digging a large pit, making boxes 12 by 12 inches by 7 feet long, stood on end in pit till full, the top of the boxes standing level with the ground. I filled the boxes with dirt from the pit—and rather poor sandy and gravelly land—and sowed the peas in the boxes. The roots went out at the bottom of the boxes, but did not penetrate any deeper, but nested around on bottom of boxes. I am sure they will go 10 or 12 feet if the pit was that depth.

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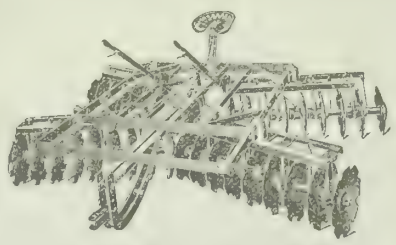

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The Home Circle.

Pruning Roses.

The National Rose Society, of England, includes in its membership the leading rosarians, not only of Great Britain but also of the world at large.

From its handbook we quote how to prune roses:

"The following general directions and explanations should be carefully read before proceeding to carry out the instructions afterwards given, or the reader may fail to grasp the meaning they are intended to convey.

"The late Rev. A. Foster-Melliar in his 'Book of the Rose,' pointed out that the necessity for pruning arises in a great measure from the natural growth of the rose. 'By watching,' he said, 'an unpruned rose tree, either wild or cultivated, it will be found that the first strong shoot flowers well the second season, but gets weaker at the extremity in a year or two, and another strong shoot starts considerably lower down, or even from the very base of the plant, and thus soon absorbs the majority of the sap, and will eventually starve the original shoot and be itself thus starved in succession by another. A rose in a natural state has thus every year some branches which are becoming weakened by the fresh young shoots growing out below them. This is one of the principal reasons why pruning is necessary. A rose is not a tree to grow onwards and upwards, but a plant which in the natural course every year or two forms fresh channels for the major portion of the sap, and thus causes the branches and twigs above the new shoots to diminish in vitality.

Two Distinct Operations.—"This being the case, in order to maintain the strength of the plant and keep it in the shape required, the wornout shoots must each year be cut away, and the remainder left almost their entire length as in the case of climbers; or shortened back to a greater or less extent, as the nature of the variety or the object for which the plant is grown may require.

"Pruning, therefore, is the art of improving the productive power and the appearance of the plant. It consists of two distinct operations. 1st, the removal of otherwise useless shoots. Unripe wood which in the spring will usually be found to have discolored pith caused by the winter frosts should be cut clean away at the base of the shoot. 2nd, pruning proper, the shortening of those shoots which are allowed to remain after the thinning out process has been completed.

"The most frequent errors made in pruning are (1) leaving too many shoots when thinning out; (2) pruning severely the shoots of the varieties which require little, if any, shortening; (3) pruning lightly the varieties which require severe pruning; (4) leaving rose plants crowded with shoots and cutting these to a uniform length all over the plant in a similar way that a hedge is clipped.

"In thinning out a shoot it should be either cut clean away to the base of the plant, or to its starting point on the older shoots from which it springs, as the case may be. When the plant has been pruned the shoots should be left as nearly as possible equidistant from each other, and regularly arranged around it so that it presents a well balanced appearance on all sides.

"When pruning a shoot it should always be cut to a dormant leaft bud, or 'eye', as it is called, pointing outwards. In order to keep the plants in a healthy and vigorous condition, some of the shoots which are more than two years old should each year be removed to make room for younger and more vigorous growths.

"Roses require to be somewhat differently pruned according to the purpose for which they are grown. For instance, shoots must be cut back severely if the plant be required for the production of exhibition roses, but if for ordinary garden decoration the shoots must be left longer; if to form bushes they must be left still longer, and if to clothe pillars, arches, etc., some of the shoots will scarcely require shortening at all.

"When pruning a rose for the decoration of the garden it should be borne in mind that it is a decorative garden plant, whether it may be the large bush or pillar to stand alone, or the dwarfed kind to be massed with others in a bed. As a large range of kinds is available for decorative purposes, it is necessary in pruning, as will be seen by the instructions which follow, to take into account their individual habits and requirements.

A large and strong-growing rose usually requires some two or three years after planting to reach its full size, and, it is therefore during those first years that the plant has to be built up, and its framework, as it were formed.

"All roses the first time after planting should be pruned severely, that is to

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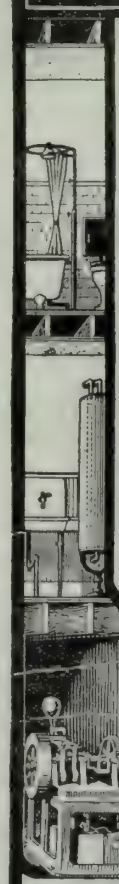

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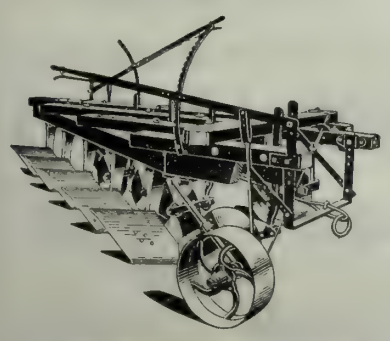

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say, they should be cut down to within three or four inches of the ground. Even in the case of strong growing climbing varieties only the strongest shoot should be left more than one foot in length.

"Roses planted in the autumn should be pruned the following spring, and if planted in the spring, should be pruned at the time of planting.

"After the first year they should be pruned in accordance with the instructions which follow:

For Ordinary Cultivation.—"In pruning roses for ordinary cultivation or for the decoration of the garden the following rules may be laid down, which apply to all:

"All dead and unripe shoots must be cut clean away to the base whence they started.

"In shortening the shoots always cut to an 'eye' pointing away from the center of the plant.

"Summer flowering roses (those which bloom only once in the season), generally need thinning and training rather than hard cutting, and last year shoots should be left long, two-year-old shoots rather shorter, and the three-year-old shoots shorter still.

"The same thing will also apply to a great extent to perpetual flowering roses, but in their case too hard pruning will not destroy, but only defer the season's bloom.

"Climbing roses should have some of the older shoots cut entirely away each year, directly after the plants have flowered in the summer, and the young shoots lightly tied in to take their place."

Flashes of Sunbeams.

Pastor (to bride elect—"And will you obey your husband in all things and follow him whihersoever he may go?" "O, Herr Pastor, can't you change that?" cried the young woman in dismay. "He's a letter-carrier."

"Why did you break your engagement with the schoolmistress?" "Couldn't stand it any longer, old man. The other evening, when I arrived fifteen minutes late, she told me I must bring an excuse in writing, signed by my mother."

Father—"Children, you did not pay good attention to the sermon this morning. Tell me what the minister said?" Three children try with indifferent success. Eight-year-old daughter—"I know. He said there would only be two more Sundays of church."

A Little Shy.

Purchaser—And will he scare at anything?

Farmer—M' friend, this hoss is jist afraid of two things: That he won't get enough to eat, an' that he won't hear when I say "Whoa."—Judge.

A Washington clubman was ciceroning a friend from the West through the social whirl of the national capital.

"Who," asked the Westerner, indicating a big, good-looking fellow at one of the clubs, "is that distinguished person?"

"That," replied the Washingtonian, in the gravest of tones, "is Louis the Fourteenth."

"Don't be absurd!" exclaimed the friend. "What do you mean?"

"Well, his name is Louis, and he is always invited when, without him, there would be thirteen at the table."—Exchange.

"Ma! ma!" sobbed Willie, "do my ears belong to my neck or my face?"

"Why, what is the matter?" was the temporizing reply.

"Well, you told Mary to wash my face, and she's washing my ears, too?"—Sacred Heart Review.

Madam—

When the problem of "what shall we have for dinner" again presents itself—just remember what a zest

Ghirardelli's Ground Chocolate

adds to any meal. It is ready at a moment's notice, it is liked by every member of the family, it is easily digested—it is, on the whole, a perfect home beverage. Yet it is as inexpensive as anything of its kind you can buy. Thirty cups to every pound.

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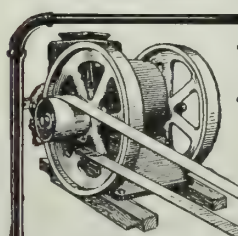

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33-41 Fremont St., San Francisco, Cal.

THE MARKETS.

San Francisco, Sept. 10, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The local market, ordinarily quiet, has been interrupted by the holidays, and there is practically no movement outside of jobbing circles. Values are fairly steady as last quoted.

California Club, ctl	$1.52½@1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½@1.55
Northern Bluestem	1.67½@1.70
Northern Red	1.55 @1.65

BARLEY.

There has been considerable activity in a speculative way, with strong prices prevailing, and the spot market, though not extremely active, is firm at the old figures, country holders being in no hurry to sell. Apparently there will be very little for export this year, as the local output is light and Northern grain is finding a strong demand in the East.

Brewing and Shipping	$1.40 @1.45
Choice Feed, per ctl	1.35 @1.40
Common Feed	Nominal

OATS.

Values are firm, but not quotably changed. A little more demand is noted, and a good movement of the seed grades is expected shortly.

Red Feed	$1.65 @1.85
Seed	Nominal
Gray	Nominal
White	1.55 @1.60
Black Seed	2.75 @2.90

CORN.

The Eastern market continues to find new high levels, with corresponding firmness here, though there is no quotable change locally. The quotations, in fact, are largely nominal, as there is not much corn coming in. There is no California yellow offered now, but it is valued at about the same basis as Eastern.

California Yellow	Nominal
Eastern Yellow	$1.95 @2.00
Eastern White	Nominal

RYE.

There is little movement of this grain, the price standing nominally as before.

Rye, per ctl	$1.45 @1.50

BEANS.

The bean situation is still unsettled, and it may be several weeks before values are definitely established, though no further change has been made in the spot quotations this week. Spot business is not active, but about up to expectations, while comparatively little buying has been done on the new crop. Arrivals of new beans here are still light, but will increase materially within the next ten days.

Bayos, per ctl	$3.15 @3.25
Blackeyes	3.15 @3.35
Cranberry Beans	4.00 @4.25
Horse Beans	1.75 @1.90
Small Whites	5.00 @5.25
Large Whites	3.75 @4.00
Limas	5.00 @5.25
Pea	Nominal
Pink	2.75 @3.00
Red Kidneys	3.25 @3.40
Mexican Red	3.50 @3.75

SEEDS.

There is a little more inquiry in some lines, but supplies are very moderate here, and little business of importance has been done so far.

Alfalfa	12½@14 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	7 @ 7½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

The flour market shows little feature, the movement being of about the same volume as for some time past.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.65 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Arrivals have fallen off still further during the last week, indicating that there is little now left in the fields in sections which ship to this market. A still further decrease is expected for some weeks to come. From now on dealers believe the local demand will be supplied from accumulations in dealers' warehouses in the city, leaving stocks in country storage until later, when better prices are expected. The demand here is limited, most consumers being well supplied, but there is a little more inquiry than for some weeks past. Fancy hay in light bales is scarce, and offerings are cleaned up without difficulty. Alfalfa is plentiful and easy, with prospects of a large late crop.

No. 1 Wheat, or Wheat and Oat	$15.50@16.50
do No. 2	14.00@15.50
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 95c

FEEDSTUFFS.

All descriptions remain firm at the old quotations, with a very fair demand for most lines. Corn products are especially strong, owing to the high prices of the whole grain, but there is no quotable advance this week.

Alfalfa Meal, per ton	$18.50@19.50
Bran, per ton	26.00@27.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	29.50@30.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Rolled Oats	34.00@35.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

While the onion crop of the river district has been considerably below normal, the demand at present is limited, and local prices are lower. Garlic, on the other hand, is extremely firm at a further advance. A large part of the crop has been shipped out, and most of the remainder is held speculatively at arbitrarily high prices. Tomatoes are doing considerably better than last week, with first-class lots selling up to 65c. Offerings of green corn are falling off, and sales have been made at higher prices, though the present quotations are the same as last week. Offerings of summer squash and cucumbers are lighter, with an advance in prices, and beans and peas show a sharp advance, the former being quite scarce at the moment. Lima beans, however, are easy, as are green peppers, okra and eggplant.

Onions: New Yellow, River, ctl.	85@ 90c
Garlic, per lb	6@ 8c
Cucumbers, per box	30@ 50c
Green Peppers, box	35@ 50c
Carrots, per sack	75c
Cauliflower, per doz	50@ 60c
Green Peas, lb	4@ 6c
String Beans, lb	5@ 7c
Summer Squash, lug box	50@ 65c
Green Corn, choice, sack	75c@ 1.75
Okra, box	40@ 50c
Tomatoes, box	25@ 65c
Eggplant, box	40@ 50c
Lima Beans, lb	3@ 4c
Sprouts, lb.	4@ 4½c

POTATOES.

Shipping business is still limited, and while both acreage and production are much below last year, local prices have been marked down from the recent level. Sweets also are lower, as supplies have been piling up and the demand is only moderate.

New River Whites	75c@$1.00
Sweet Potatoes, per ctl	$ 1.50@ 1.65

Dairy Produce.

POULTRY.

Shipments from the East have been curtailed somewhat this week, and while there has been quite a lot of stock coming in from the country the market is in stronger condition. Broilers are a little higher, and so are extra large hens, which are offered in smaller quantities than for some time. Turkeys are in more demand and higher.

Large Broilers, per lb	25 @26 c
Small Broilers, per lb	25 @26 c
Fryers, per lb	24 @25 c
Hens, extra, per lb	18 @19 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	24 @25 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.75@ 2.25
Ducks, doz.	4.50@ 6.00
Turkeys, live, per lb	22 @25 c

BUTTER.

With increasing demands and a gradual reduction of supplies of the extra grade, prices have been climbing steadily for the last week, opening at a sharp advance after the holiday. Prime firsts also are 1c higher, though firsts are unchanged. Storage stock is moving quite freely.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	34	36	37	37½	—	39½
Prime Firsts	30	30	30	30	—	31
Firsts	29	29	29	29	—	29

EGGS.

A remarkable advance is noted in extra eggs, amounting to 12c in the past fortnight, and the market has opened strong at a 2c advance after the holiday. The price is unusually high for this time of year, and while production seems to be keeping up well, the demand is decidedly strong. The advance has naturally brought about a heavy movement of storage and Eastern stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	38	39	41½	42	—	44½
Selected Pullets	30	30	31½	31½	—	35

CHEESE.

Cheese has steadied up a little this week, with light arrivals and a very fair demand. Both flats and Y. A.'s are steady at an advance.

Fancy California Flats, per lb	17c
New Young Americas, fancy	17c
Monterey or Jack Cheese	14@15c

Deciduous Fruit.

The feature of the berry market is the arrival of the first lot of Coos Bay cranberries, but the stock is not well matured and finds little demand. Choice huckleberries are a little higher, but other lines stand as before, with very liberal supplies. Some Gravenstein apples are coming in from Oregon, being held at $1.50 to $2, but prices on local stock are unchanged, while bellefleurs are lower. Arrivals of Bartlett pears are about at an end, and stock held in storage commands high prices. Other varieties are also bringing an advance over the old quotations. Plums and prunes in small packages are doing a little better, while figs are rather easy. Choice peaches are becoming scarcer, and bring a sharp advance. Cantaloupes are still very plentiful and move off slowly at low prices. Several varieties of grapes are now handled mostly in lugs, and while there is a good demand, prices are easy. Wine grapes are held at a wide range, being quoted at $17 to $20 per ton on the cars, though contracts have lately been made at much lower figures.

Strawberries (chest):	
Banner	$ 3.00@ 4.00
Other kinds	2.25@ 3.50
Blackberries, chest	1.75@ 3.00
Raspberries, chest	6.00@ 7.00
Huckleberries, lb.	5@ 8c
Cranberries, Coos Bay, box	2.75@3.00
Apples:	
Gravensteins, box	1.00@ 1.60
Greenings	75c@ 1.00
Bellefluer	75c@ 1.35
Common	50@ 75c
Crabapples, large box	75c@ 1.00
Pears, wrapped, box	1.00@ 1.25
Lugs	75c@ 1.00
Peaches, box, wrapped	50@ 75c
Carriers	90c@ 1.00
Lugs	75@ 1.25
Plums, crate	25@ 55c
Figs, double layer, drawer	50@ 75c
Cantaloupes, River, lugs	35@ 50c
Watermelons, per dozen	1.25@ 2.00
Grapes: Seedless, lugs	75c@ 1.00
Malaga, crate	65@ 75c
Muscat	50@ 75c
Black, lugs	75@ 90c
Tokay, lugs	75c@ 1.25
Cornichon	75@ 90c

Dried Fruits.

The general range of prices remains about the same as last week, with the majority of holders taking a firm view of the situation. Sales to the Eastern and export trade of late have hardly been up to expectations, but it is noted that this is true of all food products, the financial situation being held responsible to a large extent for the general apathy of buyers. Aside from the difficulty among buyers to secure money for heavy purchases, there seems to be an impression that sellers also will be pressed for money and will force their goods on the market at lower prices. Fruit packers, however, have for the most part disposed of their early purchases and show less anxiety to buy than before. Much more than half the output of most fruits has been taken out of growers' hand, and the actual scarcity, both here and in other parts of the world, is relied on to keep values pretty well up to the present level, the possibility of a break being mainly dependent on the ability of growers who have not yet sold to hold out. With the heavy consuming season approaching, and a gradual improvement in financial conditions, a stronger buying movement is expected before long. Raisins also are rather quiet, but the Associated Company has advanced its quotations again, and the Sultana crop is said to be cleaned up. The New York Journal of Commerce says:

"The situation in prunes is unchanged. Locally there is little business reported for immediate or future delivery, but the market has a firm tone in view of the strong views of growers, and the tendency of prices is upward.

"Little business is reported in peaches or apricots on the spot or for forward shipment from the Coast, and prices are nominal. There is said to be quite a little old stock seeking a market, and until this is disposed of, distributers here are not inclined to place orders for shipment from the Coast."

Evap. Apples, 1912 crop, lb	5 @ 6 c
do 1913	6 @ 6½c
Apricots, 1913	10 @15 c
Figs: White, 1913	3 @ 4 c
Black, 1913	2½@ 3 c
Calimyrna, 1913	4½c
Prunes, 4-size basis, 1912	4½@ 5 c
do 1913	5 @ 5¼c
Peaches, 1912	4½@ 5 c
do 1913	4¾@ 5 c
Pears, 1913	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912	3½c
do 1913	3¾c
Thompson's Seedless, 1912	4¼c
do 1913	4 @ 4¼c
Seedless Sultanas, 1912	3½c
do 1913	3½c

Citrus Fruits.

Oranges are moving in about the same limited way as before, the best grade being slightly higher. Fancy grapefruit is considerably higher, and an advance is expected in lemons, as old-crop stock is scarce, and values at shipping points are higher. Both lines are in good demand. Limes are higher, with very light supplies.

Oranges (per box):	
Valencias	$ 4.00@ 6.00
Grapefruit, seedless	5.50@ 6.00
Lemons	4.50@ 8.00
Limes	10.00@12.50

Nuts, Honey, Hops, Etc.

NUTS.

A large crop of walnuts is reported in the South, and lower prices are expected, though the figures will not be

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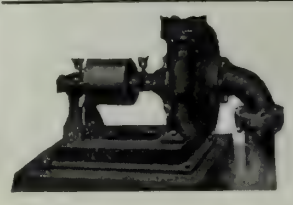

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announced for several weeks. A heavy movement of almonds is reported at the opening prices, and it is said that most of the crop has been sold.

Almonds, new crop—	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, 1912 crop—	
Softshell No. 1	16 @16½c
Hardshell No. 1	15 @15½c
No. 2	10½c
Budded	17 c

HONEY.

A renewed demand is reported in the local market, and surplus offerings have been materially reduced at about the quoted prices, new arrivals being light.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Values stand as before, with little demand and limited supplies, which are closely held.

Light	30 @32 c
Dark	28 @30 c

HOPS.

Trading is light at present, though deliveries are beginning to come through on contracts, and a more active movement is expected shortly, values standing as for some time past.

1913	20 @22 c

Live Stock.

Hogs have dropped back a little, but are quite firm at the present quotations, and values on other lines are firmly maintained, with quite a strong demand and very moderate offerings.

Grass-fed Cattle—	
Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7 @ 7¼c
Medium	6½@ 6¾c
Heavy	5 @ 6 c
Hogs: Grain-fed, heavy	8@ 8¼c
150 to 250 lbs	8¼@ 8½c
100 to 150 lbs	8 @ 8¼c
Prime Wethers	4 @ 4¼c
Ewes	3¼@ 3½c
Lambs: Suckling	5¼@ 5¾c

DRESSED MEATS.

Steers	12 @12¼c
Heifers	11 @11½c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

Buyers are still holding off, and there is not much movement, though the passage of the tariff act may hasten a readjustment of values which will permit more buying. Many growers, it is said, will do no fall shearing this year.

Spring clip:	
Southern mountain, free	8 @11 c
Northern, year's staple	13 @14 c
Humboldt, year's staple	18 @19 c
do short	13 @14 c

HIDES.

Hide values are still rather firmly maintained, and a fair demand is reported, the supply being light as for some time past.

Heavy Steers, over 56 lbs.	14½c
Medium	13½c
Light Steers, under 48 lbs.	12½@13½c
Heavy Cows, over 50 lbs.	12½@13½c
Light Cows, 30 to 50 lbs.	14 c
Kip	14½@16 c
Veal	17½@19 c
Calf	17½@19 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

Values remain unsettled and largely nominal, the local market being in poor shape. A good many horses, some of them of desirable class and in good condition, are being offered at bargain prices by contracting firms and owners of stables, and while a few heavy drafters might be disposed of to advantage, conditions are not encouraging to shippers of outside stock.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80

MULES.

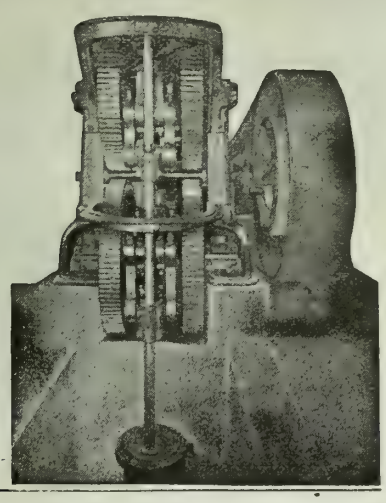
1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

By the combination of the California Business Farmer, published at Stockton, with the PACIFIC RURAL PRESS, the latter journal will, we believe, have the largest paid circulation of any weekly farm journal on this Coast. By the combination we are sure subscribers to both journals will be benefited, in that we have now a splendid organization which will devote its entire energy to publishing a great farm paper. In all departments—editorial, advertising, business and subscription—we are equipped to serve the agricultural part of the Coast's population in a way that we believe will keep abreast of the big things doing in those lines.

For some reason this office has been deluged with articles during the past two weeks, sent from all over the United States. These articles have all been returned, as we have all the writers on our regular staff now that we can afford to pay. However, while we have plenty of brains, we need more legs. What is wanted is more subscription men. Young men who know something about farming and who can present the RURAL PRESS in a clear, straightforward way to the farmers of California. To such men we have to offer an attractive selling proposition at a good salary.

And now a word to our advertisers. For several years past the results secured to those using space in the RURAL PRESS have been uniformly good. By the much larger list we are now serving, we believe that those who wish to secure the farmers' trade can do so at great profit to themselves by the use of our columns. A letter received this morning from a nursery advertiser from Woodburn, Oregon, states: "In our spring campaign we found your paper the best medium—figuring on a basis of results secured—used by us, and we carried advertising in some 20 papers." We want to give the writer of the above, as well as all our advertisers better results this season.



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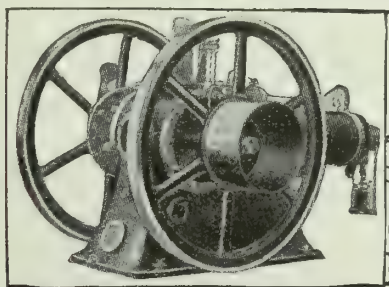

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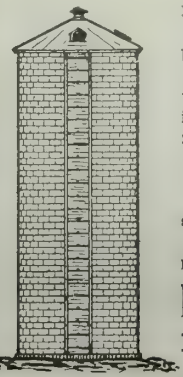

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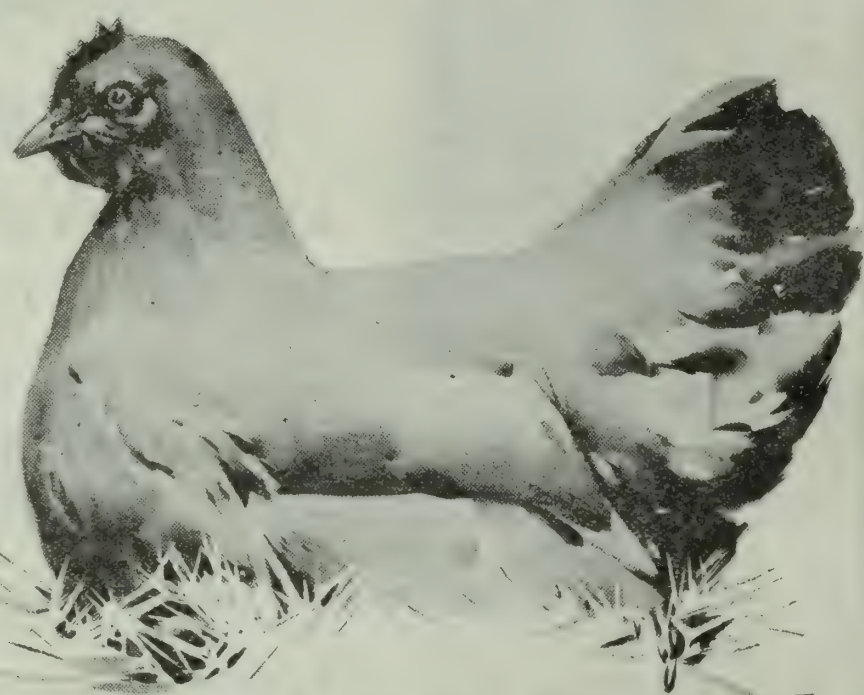

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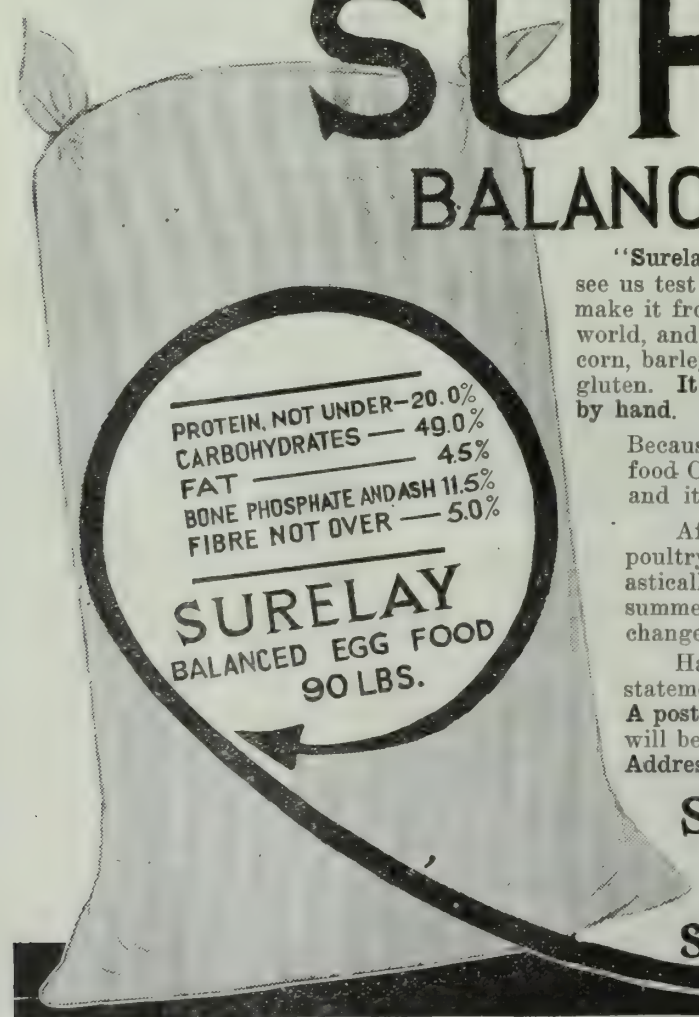

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Vol. LXXXVI. No. 12. SAN FRANCISCO, SATURDAY, SEPTEMBER 20, 1913. Forty-Third Year.

FEEDING THE DAIRY CALF.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

California's climate has received an enormous amount of credit for everything good we do or have, and the dairymen have been considered especially fortunate in having long summers and short mild winters.

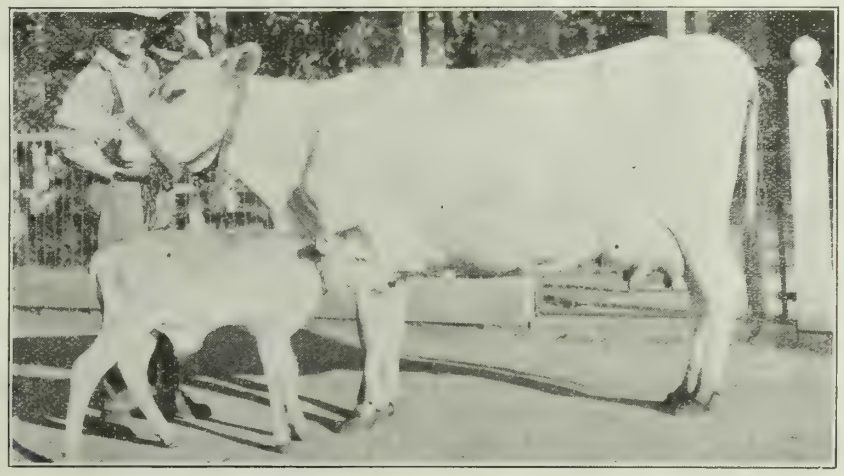
It is claimed by many, and is no doubt true that the California grown dairy cow is much larger than the eastern raised cow and again the climate gets most of the credit. However, the size of an animal depends a great deal upon the care it is given in its early life and though the climate conditions are a great aid, good care during calfhood is also very essential, and in fact many breeders place more stress upon the young calf than upon any of the other factors.

While visiting a large herd of dairy cattle some time ago, we were struck with the fast that both the aged cows and the calves were of uniform size and that the size was far superior to the ordinary dairy cow of this State.

Upon inquiry we were told that the reason for this was due to good feeding and care of the calves and also in not breeding too young.

The practice, it seems, is to take the calf from its mother when it is from one to three days old and put it into the calf corral. This corral has a shed at one end, with a concrete floor, which provides shade and shelter. At the other end a row of calf stanchions are built in, and a water trough placed next to them. On one side a small feeding rack was built to furnish roughage in the form of alfalfa hay.

A good deal of care is given the feeding of the calves and for the first few days they are given their own mothers' milk, as that supplies the colostrum desired, which should be fed while warm from the cow.



Empress Lass and Her Calf, Valet's King.

How Mr. Guilford Raises a Holstein Calf.

The calves are fed three or four pints at first, two or three times a day, and after a couple of lessons the calf usually stands up in the stanchion with the rest where he is fed his allowance which it should be mentioned, is the same amount every day. This amount is increased as the calf grows, and while the amount of while milk is cut down and more skimkilk added, the owner stated that he considere the more whole milk that was given, the better the calf.

Alfalfa hay is supplied in the racks and it is not long before the calf learns to eat it, and this is also good, as it develops the animals' digestive organs and makes for larger production. At the time of our visit the calves were being pastured in small alfalfa fields and were not fed any hay at the calf sheds at all.

We were told that after they are four to six months old, the regular milk diet is cut down, but they are given more or less milk whenever there is a surplus and in fact we saw at milking time a bunch of yearling heifers which were eagerly awaiting their share of the skim milk and they were as fine a lot as one would care to see.

There is one point about skim milk that all feeders have to be careful of, and that is in feeding too much to the young calf at a time, as it will, if fed too liberally, stunt the animal's growth and if fed in irregular amounts, is apt to cause bowel trouble.

With all of the good feed and care one gives the calf, however, the age to breed undoubtedly has a good deal to do with the size of the aged cow.

Just what the right age is to breed heifers is a point that has not been satisfactorily settled, but some of our foremost breeders in this country seem to think that a heifer should not come in before two years of age, and in some cases two and a half.

In this respect we notice an article by E. A. Powell, of Syracuse, New York, in which he says that he breeds his heifers to come in at about two and a half years of age, providing they are good strong calves. On one of the largest type herds of Jerseys in this State the practice is to have the heifers freshen when two and a half years or more, so it would seem that if a large type animal with a strong constitution is necessary for big production, more thought should be given the subject by dairymen.

As the price of butter-fat is so high at present, a great many dairymen consider the feeding of whole milk too expensive, and as a consequence feed skimmilk instead.

A practical way to feed skimmilk and get almost as good results as with whole milk and at a very small cost is to use some substitute for butter-fat, oil meal fitting in very nicely for this purpose.

This substitute is considered almost as wholesome and nutritious as butter-fat and can be purchased for 1½ to 2 cents per pound, and it would seem a profitable thing to feed oil meal and skimmilk in place of whole milk, in view of the fact that results are practically the same and at considerable less cost.

In feeding the fat substitutes, whether oil meal or the especially prepared calf feeds on the market, their use should not be started for a week or ten days, at which time the whole milk is gradually cut down and more skimmilk added. At this time the oil meal may be started, adding a teaspoonful of the meal which has been entirely dissolved in warm water to the ration for each calf.

In one of the pictures is shown the cow Empress Lass and the calf Valet's King, owned by N. H. Locke Company of Lockeford. The calf, Valet's King, is now a two-year-old bull and weighs, we are informed, over 1200 pounds. This is certainly a good size for a two-year-old Jersey, and we venture the opinion that Mr. Locke fed a liberal amount of good milk during the calfhood days of this bull.

With good feeding and California climate, it would not be surprising if a good demand will be made upon this State in the future for big type dairy cattle. We have the climate and feed and are only lacking in dairymen who will study the detail work necessary to success.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Sept. 16, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	.41	.64	74	48
Red Bluff	.00	T	.18	104	64
Sacramento	.00	.01	.13	104	56
San Francisco	.00	.08	.01	101	52
San Jose	.00	.17	.13	104	48
Fresno	T	.33	.00	104	60
Independence	.00	2 52	.00	90	52
San Luis Obispo	.00	.93	.10	104	46
Los Angeles	.00	T	.00	100	62
San Diego	.00	.08	.00	86	62

The Week.

Half an inch of ice on the east side of the continent and 100 degrees of heat on the west side, on the same parallel of latitude, may give the observer on the moon opportunity for exclamation upon the wide range of September's climatic variations in the United States. To us who are actually in it, there is also the abiding chance for comfortable comments, because we are always, broadly speaking, at the better end of the scale. The telegraph this week tells of the havoc wrought in far-eastern gardens; many vegetables usually trusted for winter use through storage, being frozen this year before mature for frost-proof covering, and the brief garden-season abruptly closed, with great loss and disappointment. In contrast therewith is what we see around us; the garden-year at its beginning; the autumn springtime here with ample heat to start and carry growth, wherever moisture is present by rainfall or irrigation; the season of verdure just at hand and the time of killing frosts, except in low places, three months away—if indeed they come at all. A little preachment then, upon the text which telegraph and eye jointly suggest, is that all new readers who have come to California too recently to understand the condition and that all old readers, who have been here long enough to forget their first impressions of autumn growth, should awaken this year and give seed to the land for growth of all except the tenderest plants in order that, from Christmas onward, their tables may be laden with vegetables of their own growing and adorned with flowers from the same source. Though the days are drawing in, there is much available time because the harvest is now either gained or lost and its requirements of labor released. Break up the ground now for the garden, and when adequately moist from cloud or reservoir, sow the seed early and confidently, and results are reasonably sure. Remember that the winter garden, on all lands except the highest and the lowest, is easier to make than the summer garden, because the heat is less and the moisture more. Master the few things which it is necessary to know to handle the California fall-and-winter garden with satisfaction. Study carefully the catalogues of the California seedsmen, for they offer varieties largely demonstrated to meet our conditions. Never forget this as a prime rule of faith and conduct: that when the Eastern garden-season ends, the California garden-season begins.

The Autumn Fairs.

The genial autumn heat tells also of the fairs which for more than a month to come will reflect California's resources and productive achievements. This week the State Fair is in progress at Sacramento, as a preliminary review upon another page indicates. Other notable exhibitions of the district class will follow and special class exhibitions also, like the Apple Show at Watsonville, October 6 to 11, for which unusual and unique preparations are now being made. Possibly the most striking exhibition affair of the year may be the California Land Show, to be held in this city in October. A number of counties seem inclined to make this their coming-out occasion, and the environment will certainly be inviting. The statement is that the show will be held in the largest canvas pavilion ever seen on the Pacific Coast. The inside will present a unique spectacle, for not a pole or rope will be visible, and tall, straight redwood trees, crowned with greenery and hung with thousands of brilliant electric bulbs with artistic shades, will rise from the ground at intervals. The illusion of a redwood forest will be completed by painted scenic backgrounds on all sides. Not an inch of tent canvas will be seen, but vistas between the tree trunks will reveal county collections and constructions representing agriculture, and beyond the hazy distant landscapes and sky scenes which the painters know so well how to deceive us with. It seems a very unique conception. The time will be splendid for a visit to the metropolis, for in her October climate San Francisco yields to no place on earth.

No Use Trying to Heat Her Up.

There is another member related to temperatures here and elsewhere which is called to mind by the report of ice in New York in September. It is the fact that while California's invention of the practice of firing against frost occurrence received approval by success during our severe frost experience of last winter in the southern citrus districts, there are other places where freezing is too hard and frequent to make our method trustworthy. The State of Utah, for instance, is inclined to conclude that heating the part of the atmospheric university which overlies her orchards is too great an undertaking. In the Monthly Weather Review, J. C. Alter deals with frost fighting in Utah, and his report is not encouraging. Assuming 30 degrees as the temperature below which heating is necessary, he says that for the first degree the cost is 60 cents per acre per hour, while with each additional fall of temperature the cost increases 40 cents per degree, per acre, per hour. This means that when the temperature falls to 20 degrees it will take $4.20 per acre per hour to bring it up to 30 degrees, or the safety mark. In view of this, it is said that many growers who were alleged to have fired their orchards successfully in the past have abandoned the system. The point we wish to make in this connection is that, even if this conclusion should be right for Utah, it is quite otherwise for California. With us the cost of fuel is less, and the value of the product to be protected is more. It might not cost us $4.20 per acre-hour to raise the temperature 10 degrees, and even if it did, a citrus crop would stand the outlay: especially if you consider the fewer hours which would be, on the average, required in this State. This will strike most readers as a new way to calculate the money value of our climate, but the citrus growers and those who supply frost-fighting heating devices are figuring that way all the time, and they know just how good California is for their allied industries.

Agricultural Credit Enterprises.

Anyone who reads current announcements in newspapers and circulars must be aware of the fact that financial sails are being set to catch new business breezes arising from the disturbance of the public mind over the matter of agricultural credit. It is only natural that those who live by handling the money of others should make use of the agitation in ways which will enable them to handle more and to handle it in new and attractive ways. They seem to be proceeding upon the assurance that money can be had on agricultural security so that it can be loaned for something like one-third less than current rates which banks make to farmers, in the West at least, and that the business of doing it offers large interest on the small capital required to operate such a business. If this were not so, why should organizers and promoters, who are not in the habit of working for health or pure patriotism, be so busy? They are probably building upon the assurance that the dissemination of a true view of the security of agricultural credit will bring out of various hiding places much money which old forms of doing business with money have never been able to uncover, and that placing it at even low rates of interest will bring large profits to those who place it. This simple suggestion may help those, who do not give much attention to financial matters, to understand why the wide demand for lower interest is stimulating persons, who may be roughly classified as belonging to the banking fraternity, to such earnest and elaborate activity. It simply means that banks and banking operators do not usually lend their own money, any more than a commission merchant sells his own potatoes: the greater profit to the bank or to the spud merchant comes from lending more money or selling more potatoes, as the case may be. The capital required to operate the bank or the spud-shop may therefore earn more for its owners when large transactions are made at low rates than vice versa. The same condition does not apply, of course, to the owners of the money which the banker lends and the potatoes which the merchant sells—but it is up to them to refuse money to loan or potatoes to sell, if they desire to do so. The new line of big business in loans to farmers proceeds upon the assurance that there will be plenty of money for these rather new uses and that though the interest will be low the profits to those who develop the business will be large—that the small operating capital will bring to its owners several times as much interest as comes to the money which is gathered and loaned. This is the way all bank stock becomes profitable, and the new style of banking organization for loans to farmers is essentially the same as the old style in principle, though its methods may be different in some respects.

We are not objecting to this at all, for two reasons: first, because it is in accordance with correct banking policies, if honestly and intelligently administered; second, because it seems likely to make farm loans available at much less interest and more favorable terms than hitherto. But we do object to the claim which we see sometimes made, that such organizations are a product

of the work of the American Commission on the Study of Rural Credit in Europe—conveying the impression that these eager organizers propose to operate toward the same ends. They are somewhat like the Credit Foncier of France, but that is not a co-operative organization at all. The fundamental idea of co-operative credit institutions in Europe is to limit, to say 4 per cent, the profit on the money furnished by stockholders and to redistribute all earnings above that to the borrowers or to place it in the reserve fund. The only way we can see to secure that result is for farmers to organize for it and do the business themselves just as they do in Europe.

One Tariff-Reform Asset.

We cannot tell yet how many liabilities to injury the current tariff-reform politics may inflict upon us, but we seem to have acquired one valuable asset and to let all the world know it. This is the demonstration that our wines are pure, through the hard protest which our makers of sweet wines made against paying a heavy tax on the brandy which they made themselves to fortify such wines. This protest brought out the fact that those who were anxious to cinch our pure product were the Eastern wine-makers whose product is largely made without grapes, and who desired to place against our pure grape product the same handicaps which they carry as producers of imitation wines. As soon as the people heard that, a halt was called upon this branch of the reform army, and the Congressional committee threw out the amendment which our pure-wine interests so seriously objected to. They decided that the question was too important and too complicated to take up at this time, and determined to postpone its consideration until the next session of Congress. One of the committee subsequently said: "We are going into this question fully later, and while the whole matter has many ramifications requiring careful study, we are determined that the makers of spurious and adulterated wines shall be put out of business." As this is exactly what California desires, we count it clear that we have landed at least one asset against our tariff-reform liabilities. And then we have gained something else, namely: the most magnificent advertisement that our wines are genuine. This fact could not have been more voluminously and impressively set forth than it has been in this connection. Incidentally also we have aroused Dr. Wiley and set him to pounding our sophisticating rivals at the East, and Dr. Wiley is neither silent nor slow as a pounder: he yells and whacks and whacks and yells like an exhorter of oxen. Dr. Wiley is a good asset also, when he is on your side: but otherwise unpleasant and to be avoided.

Other Tariff Liabilities.

But there are other things about the tariff reforms which are not so pleasant. We note some which threaten our animal industries. It is telegraphed from New York that butter from Siberia and Australia is there in bond waiting to make its debut into the American market along with Argentina beef which is soon expected. A full thousand firkins of the Siberian product, weighing about 144 pounds each, are stored in warehouses awaiting the passage of the new tariff bill which would reduce the present 6 cents tariff on butter to 2½ cents. Delivered into the refrigerators, the Siberian butter has cost 20⅝ cents per pound, and adding the tax under the proposed tariff it would come to the dealer at 23⅛ cents, said to be about 5 cents under the prevailing prices for butter of similar grade from domestic dairies. Some of the experts declare that the Siberian product is as good as the best grades of domestic butter. A smaller quantity of Australian butter, and also a little from Canada, is in bond awaiting the opening of the gate into the American market. How all that firkin butter from Siberia could be as good as American creamery is very hard to realize, and it probably is not. And yet the menace to our dairy production on this Coast in Siberian butter is probably real and ominous. We expect to catch it from all around the sky when the American policy of protection to home industry falls—but it will not be for long."

Queries and Replies.

Hogs and Dried Peaches.

To the Editor: I have a hold-over crop of peaches that are wormy and black and would like you to advise as to their value for hog feed. I have had no experience with hogs and have no afalfa or green feed on the place, and would have to buy all other feeds. What other feeds would be best with peaches and what proportions? What kind of hogs are best for the purpose, and what are best to avoid?—Fruitman, Fresno.

We hold it best to avoid all kinds of hogs on the basis of moldy, wormy feed. Even if the peaches were fairly sound though unsalable, it would certainly not pay to buy hogs to feed them to by a man who has no other feed and presumably does not know anything about hogs. It certainly would not pay to purchase feeds at market rates to go with peaches, even if sound but unsaleable, simply for the sake of saving the latter. In trying to get something for bad peaches, one could easily fail to do that and might also lose all his investment for other feeds and for hogs also. This is not against the food value of dried peaches for hogs: it is against the proposition of buying hogs for dried peaches. We should plow in the stuff as a fertilizer. But, theoretically, 100 pounds of sound dried peaches would have feeding value equivalent to 113 pounds of alfalfa hay or 85 pounds of corn or barley. This may help you to sell them to a hog feeder, if they are not as bad as you describe them, which is possible.

Fuller's Rose Beetle.

To the Editor: Enclosed find a specimen of beetle that eats the tender shoots of the lemon tree. I have been picking them off, as it appears to me they are a detriment to young trees. Please name it and tell me if you think it necessary to fight them.—E. T., Gardena.

The insect is Fuller's rose beetle, which has injured young citrus growth, grafts, etc., in your part of the State for many years. They should be destroyed as you are doing. A defense can be had against them by tying cotton batting loosely around the trunks. The insects cannot crawl over it, and they do not fly.

Olive Requirements.

To the Editor: I recently bought an olive ranch and want some information which, if you will kindly give me, I shall feel indebted to you. Do olive trees need much water? Is it all right to cut the suckers at this time? Is lime a good fertilizer, and when should dressing be put on? Can you give me the names of buyers of olives? Should trees bear every year?—C. P., Auburn.

Olives need water enough to make large fruit (for the variety) and to make also enough new thrifty wood to bear a following crop. No one can say just how much water, for that depends upon depth and retentiveness of soil, no matter whether the water comes from rainfall or irrigation. Other conditions being equal, the olive will do very well with somewhat less water than citrus fruits require, and if well cultivated will thrive on less summer water than the peach. It is, of course, very hardy against drouth, but is not likely to be profitable under such condition. Theoretically, a properly irrigated, cultivated, and pruned olive tree ought to bear every year, but practically they do not usually do it. It is all right to remove an undesirable sucker whenever you catch sight of it. Lime is a good thing to make a heavy soil more friable and may be directly useful to the plant. It cannot, however, be called a fertilizer in serving the general uses of the plant. We cannot name buyers of olives for fear of omitting some who might be entitled to mention. The woods seem to be full of them this year: ask your neighbors to point them out.

Rye Hay

To the Editor: Will rye make good cow hay? Will cows milk good on it? My idea is to plant it early and keep it pastured down close until early spring, then let it grow up again and cut it for hay.—J. E. W., Walnut Creek.

Rye is the poorest hay grain because of the hard fiber emphasized by drying. Green rye is, however, good cow feed. We doubt if you will get much spring hay from close pastured winter growth. We should expect that the rye would peter out before spring. If you want to get the most out of rye, you should mow and haul to the feed lot. If you prefer to pasture, start the rye as soon as you can, pasture about March 1 (with you) and then plow in the residues and get the land in good shape for a summer crop of corn, sorghum, squash, beets, or whatever else you like, for midsummer and fall feeding. This is supposing your land is fairly deep and retentive and this winter's rainfall is ample.

Winter-Grown Forage.

To the Editor: I have been a resident of this State one year, and, in consequence, not yet familiar with its climatic possibilities. During last fall I observed that when alfalfa became dormant, then burr clover commenced to grow and during the entire winter and early spring converted the old barley fields into fine pastures. I desire to know if this plant is an annual or perennial, and if you would advise planting burr clover with barley for winter pasture. Would barley and Oregon vetch make good winter pasture or hay? How much vetch seed would you sow to the acre? —J. D., Gridley.

Burr clover is an annual, but holds on well to land by its free seeding. It starts with the first fall moisture and grows until moisture goes out of the ground in the early summer. It is well worth sowing on winter pasture lands in the valleys and foothills. You could probably do better with vetch sown with barley or rye; about 60 pounds of vetch seed to the acre with grain.

Importing Fruit Trees.

To the Editor: Can I have apple and cherry trees shipped here from France or Italy?—P. R., Fallon, Nevada.

You can find out what quarantine regulations you would encounter by writing to your Nevada Experiment Station at Reno. If you comply with them you can bring in the trees, but we do not see why you wish to do so unless you are starting an experiment station. You can get from Pacific coast nurseries varieties which have been demonstrated to give best results. If you tell the nurseryman that you have to meet the Nevada climate, he will make intelligent selection for you. If you remember and wish to try some particular varieties known to you in the old countries, the easiest way is to get some properly packed scions by parcel post and graft them into trees which you already have growing. Scions are more apt to come through alive and will only cost a fraction of the expense necessary in importing trees.

Prune Nomenclature.

[Written for the PACIFIC RURAL PRESS by LEONARD COATES of Morganhill.]

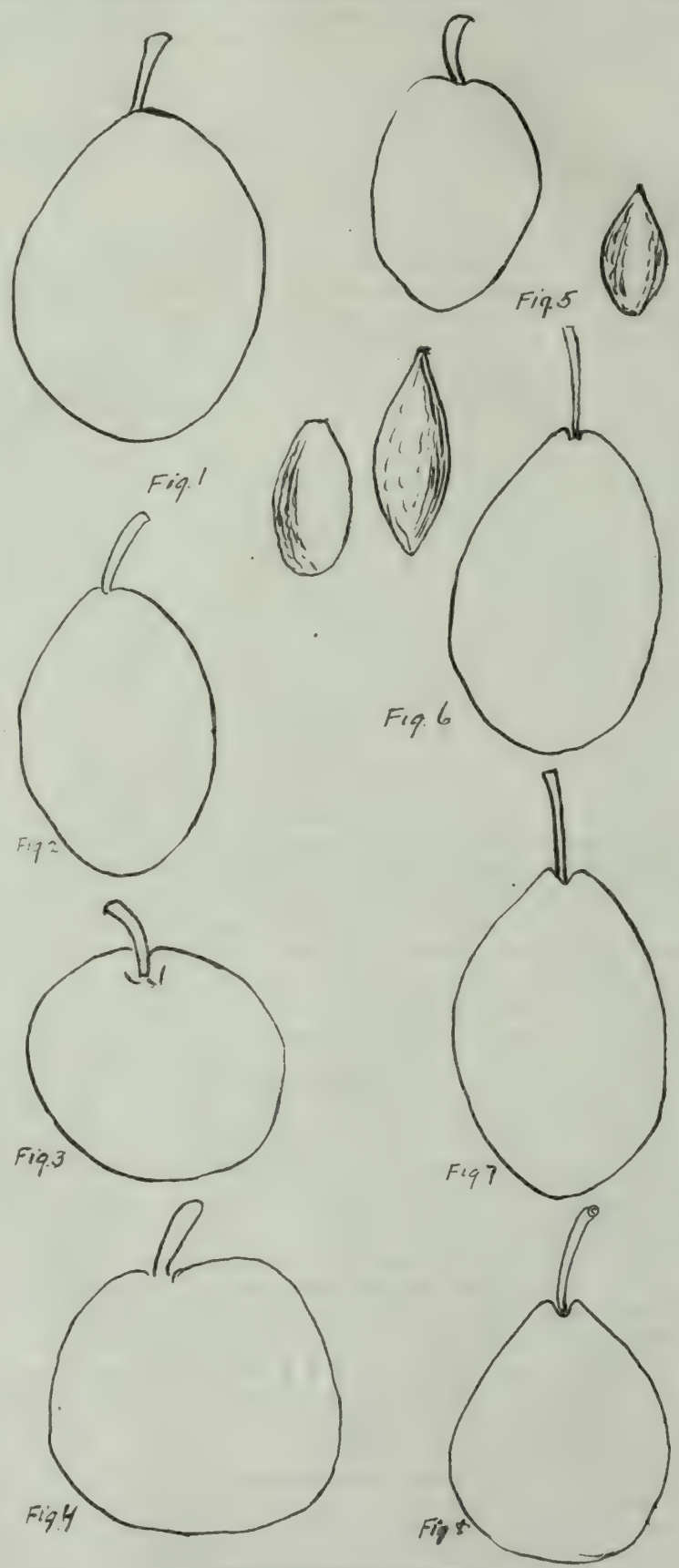
The history of the introduction of what is called the "French prune" into California, and all of local interest that is attached to it, may be found in Wickson's "California Fruits." It has been the privilege of the writer during the past year to spend some time in the Lot et Garonne, and also to have access to one of the best horticultural libraries, that of Mr. Edward A. Bunyard, of Kent, England, whose collection includes many works by noted French and German pomologists. The conclusions arrived at are in striking corroboration of what is admitted by Professor Hedrick in his recent work, entitled "Plums of New York", that there are "various types of the Agen prune in America worthy of varietal distinction," and which has been so claimed by the writer for more than twenty-five years, and that the term "Prune d'Agen" is a generic one, including a number of very distinct varieties.

In the Valley of the Lot, as is now well known, the prune area has been, and still is, extended chiefly by the transplanting of suckers from the root which spring up almost anywhere, and thus the characteristics of the original seedlings, good, bad, or indifferent, are propagated indiscriminately. The farmers, however, have apparently made the same discovery, that "there are types worthy of varietal distinction," as grafts may be seen, here and there, in some young suckers, or in sprouts along the roadside, where the prune may sometimes be seen growing wild, in the form of hedges. There are no nurseries in the South of France, and the packers, or "merchants" in the large towns know nothing more of varieties than the packers do here: they know the quality of a prune as soon as they feel it, and the grader gives them the size: to that extent alone are they interested.

We come now to various descriptions of the Prune of Agen, or D'Ente prunes, as it is there commonly known, beginning with a translation from "The French Gardener," translated by John Evelyn in 1675: "Plums are to be dried like cherries, very ripe, gathered best for this purpose are such as are fallen off the trees, as they are most fresh and will be more agreeable to eat than those which you will gather, which always retain some verdure upon them. The best to dry are 'Imperial,' 'Date,' 'St. Catherine,' etc."

In the same year, 1675, in the "Theatre of Agriculture," by Olivier de Serres, we read: "Touching the gathering and keeping of plums, as their qualities are diverse, so also are they differently conserved. Some are dried entire, without being skinned or stoned, but others are stoned and peeled and in this state exposed to the heat of the sun to dry off, or in default of the sun, put in the oven and moderately heated. When not peeled, some of them are dipped into an alkaline preparation which causes the skin to come off. Those which are transported from Provence are treated differently. These are put on points of thorns without touching, and the bush is suspended in the air by a cord attached to a stick. After having detached the skin, which they take off with knives made of cane, so that the rust of the iron does not injure them, they are then left outdoors for a couple of days exposed to the air, but are taken in a shed at night. The stone is not taken out until a few days afterwards, and it is squeezed out with the fingers. Thus the prune rests entire and round like a fig. The plum is then replaced on the bush and placed in the sun for a few more days; then, being moderately dry, and without waiting until the juice is entirely gone, they put them in pans well coppered, to cook them in syrup."

That's the seventeenth century prune, the description being both interesting and instructive, and a few years later, in 1697, is another mention of varieties, occurring in "Instruction for Fruit Gardens," by Quintinye, who recommends "Brignole, St. Catherine, and Ile Vert."



Historic Outlines of Prunes.

Fig. 1, Agen of Ulas; Fig. 2, Agen of Noisette; Fig. 3, Monsieur; Fig. 4, Royal de Tours; Fig. 5, Agen of Lucas and Oberdick; Fig. 6, Agen of Congress of Pomology; Fig. 7, Agen of National Horticultural Society; Fig. 8, Agen of Downing.

The eighteenth century was, perhaps, so taken up with the Revolution, and causes that led up to it, that a considerable period is skipped before we find in a "Complete Treatise on Nurseries," by Stephen Calvel, 1805, this description of—

"**Agen.** This is one of the most famous plums to make dried prunes. It is often confused with Royal de Tours, but the two species offer very distinct characteristics. The fruit is very dark, violet, almost black. The stone is very flat and cracks easily, and sometimes splits. This plum ripens in the middle of July. There is a variety which has fairly consistently the double fruits."

About the same time, no date given, in a "Treatise on Fruits," by Converchel:

"Agen.—This variety, which is often confused with the Royal de Tours, is fairly large and oval. The skin is violet, approaching black,—it's stone is very flat,—flesh is sweet. This plum ripens towards the end of July.

"Royal de Tours.—This plum has some resemblances to the Prune de Monsieur. It is almost equally globular, rarely reaches eighteen lines in length, and is often broad at the base, and divided by a shallow suture. The skin, a reddish violent, is covered with small spots of yellow, but they are hidden by a bloom which covers the whole of the fruit. The flesh is a yellowish green, very sweet, but more acid than the Prune de Monsieur, detaches easily from the stone, which is large, flat, and rough. This latter characteristic distinguishes best of all this last named variety. Ripens towards the end of July.

"D'Aste.—This resembles very much Agen, but, however, it is larger and earlier. It is very little known in the north part of France, but largely cultivated in the centre, where it is very much appreciated, and they prefer it even to the Agen to make prunes. Of this there is also a variety of which the stone is almost always double."

About 1840, in "Le Verger," by Mas, is this description of

"Agen. Fig. 1.) The fruit is medium size, exactly oval, more pointed at the stem end than the other, where it is somewhat wide. Skin.—Thick and firm, detaching itself from the flesh, and is a clear purple. It ripens at the end of August, and the commencement of September, when the purple becomes very dark and is covered with a bloom. Stem.—A little long, and not very thick. Flesh.—Yellow, with abundant sugary juice, but not good enough to eat raw. Stone small, almost ellipical, flattened."

In 1859, in "Le Jardin Fruiterer," by Louis Noisette, we find:

"D'Agen. (Fig. 2.) Synonym: Robe de Sergent or Date Plum. For many years Agen prunes have been known among the best for drying. However, they have only been known a few years in Paris. After the information we have received from Agen it seems that they do not graft this tree in this country, but they multiply it by suckers. Its fertility is extreme, the fruit is oval, flattened, divided on one side by a suture. It is not eaten raw, but dried in the oven; it is one of the best for prunes. It ripens near Paris in the first days of August."

Duhamel de Monceau, in his "Treatise on Fruit Trees," a work considered authoritative on the exact determination of varieties up to this date (1868), describes:

"Monsieur. (Fig. 3.) Fruit large, almost round. Stem large, implanted in a fairly deep cavity. Skin is beautifully colored violet, detaching easily from the flesh, which is yellow. Ripens at the end of July.

"Royal de Tours. (Fig. 4.) Very large, divided in two by a well-marked suture. Stem stout, planted in a shallow cavity. Skin is of light violet with yellow dots The juice is abundant and sweet, and of a better flavor than that of 'Monsieur.' Ripens at the end of July."

In the "Illustrated Hand-book of Fruit Culture" by Lucas and Oberdieck, in 1870, is described:

"D'Agen. (Fig. 5.) Fruit oval, fairly even, stem stout, flesh greenish gold; ripens middle of September."

In 1871 "The Society at Lyon" published in "The Pomology of France" this more lengthy description of the plum:

"Agen. One must not confuse this with the Date Plum, or another similar form called d'Aste.

The true Date Plum (shaped like a finger) is yellow and violet, and is a typical variety very anciently known. Very vigorous and fertile in its own country, but grows badly in the North of France. Its branch is apt to weaken and break up into many twigs. Fruit, medium or fairly large, oval, elongated, divided into two parts by a suture which is not very apparent towards the base. Stem, medium and fairly stout, skin not adhering to the flesh. Flesh very juicy, yellowish green, extremely sweet. This variety ripens in its own country towards the end of August and the commencement of September. In the north, where it is little cultivated, it ripens very imperfectly towards the end of September and the beginning of October. From this plum are made the very excellent Bordeaux Prunes, which are sold very extensively."

In 1895 was published "The Practical Fruit Gardener," by Simon-Louis Frères, where this fruit is thus described:

"D'Agen. Syn.: D'Ente, D'Ast, Violet Date, and Robe de Sargent, also du Roi and Saint Maurin. Medium size, oval, greenish yellow flesh, very sweet, ripens in September. Tree rather weak in growth, stunted in North of France."

In the Descriptive Catalogue of the Congress of Pomology of France, in 1906, we find:

"Agen. (Fig. 6.) Syn.: D'Ente, D'Ast, Violet Date, and Robe de Sargent. A fruit somewhat tapering to stem, suture rather pronounced, stem rather long, rather thin, and deeply inserted in a narrow cavity. Skin, detaching itself from the flesh, of a dark purple violet. Flesh, separating from the stone, very juicy and sweet. Ripens at the end of August and beginning of September."

In the National Horticultural Society of France appeared an article on "The Best Fruits at the Beginning of the Twentieth Century," and it is said of

"Agen. (Fig. 7.) The fruit is medium sized, oval, tapering to the stem; suture rather shallow. Stem long and rather large, inserted in a small cavity. Flesh yellowish green, very juicy and sweet. Stone very long and narrow, pointed at the extremities. Ripens in September."

Downing (1882), in his "Fruit Trees of America," gives as synonyms of "Prune d'Agen," D'Agen, Prune d'Ast, Robe de Sergent, Agen Datte, Prune du Roi, St. Maurin, and Prune de Brignole. (Fig. 8.) A foreign variety of excellent quality. Tree of moderate growth. Branches smooth. Very productive. Fruit medium size, oval, slightly necked. Suture small. Skin violet purple, covered with a thick bloom and numerous small dots. Stalk nearly an inch long, a little curved, set in a small depression. Flesh greenish yellow, juicy, sugary, rich, and delicious, slightly adherent to the stone. Best, middle and last of September.

The writer, about the year 1886, made a study of this subject, merely with the object of illustrating what he then called "types" of the French prune. Prof. W. P. Hedrick, of the Geneva, N. Y., Experiment Station, says they are worthy of varietal distinction. A photo-engraving of those "types" was published in the PACIFIC RURAL PRESS of October 9, 1909; but an equally important factor in determining varieties is the time of ripening, there being fully three weeks difference in this respect.

Our Robe de Sergent.—The name "Robe de Sergent," all French authorities agree, is merely a synonym for d'Agen, or, more properly, d'Ente. The late Felix Gillett pointed this out, showing that the plum so named in California was a variety grown only in the valley of the Loire, and which he called "Loire d'Ente." Mr. Gillett also disseminated several distinct d'Ente prunes, a few trees only, and of which perhaps not half a dozen of the originals yet remain. But they are not all lost, as the writer has discovered, and which is but further corroborative evidence in support of what is here contended.

French authorities speak of the d'Ente or Agen prune as not fit to eat raw: American pomologists, like Downing, speak of it as "rich and delicious."

Critics say the French use artificial methods in curing because the weather is such that they must do so. On the contrary, the summer climate in the South of France is very similar to that of the Santa Clara valley.

The commercial prune-grower, who may hurriedly glance at this page, will wonder what it is all about, and perhaps may conclude that any difference of opinion as to names signifies little. If that were all, he would be right. But, as a grower, he is interested in growing the best varieties of d'Ente or "French" prune, which terms simply embrace several distinct types or varieties grown in the South of France.

Cover Crops for Citrus Fruit.

[Written for the PACIFIC RURAL PRESS by J. E. ADAMSON, Pomona.]

As the fall months draw near, the question of the desirability of cover crop or no cover crop comes to the foreground from the point of view of the orchardist.

There are arguments advanced on both sides of the question which are worth considering. In favor of the planting of some form of cover crop, probably the strongest factor is the increase of the humus content of the soil, due to the decay of the plants, both top and root, when plowed under in the spring. Next comes the additional value in available ammonia from the decomposition of the vegetable matter, which is greater with some plants than others, for the reason that some plants draw on the store of nitrogen in the atmosphere, while others take all their supply from the soil. Lastly, comes the value of the growing plants as a cover to the soil during the dry days of the fall and winter and as a protection against washing of the soil during the winter rains.

The orchardist had better consider the cover crop as a green manure crop, as that is its prime importance when planted for winter growth.

Summer cover crops are not to be grown unless there is irrigating water or water from rain enough to support both trees and green crop.

What to Plant.—For winter growth the most popular plant at the present time is the winter vetch. There are several varieties of vetch, but the small seeded kinds are the most sought for, as the same weight of seed will produce many more plants and seem to grow just as vigorously.

Canadian field peas, burr clover, and fenugreek have their advocates among the citrus growers, and the last two possess some qualifications to commend them. The burr clover is a native plant and will thrive with less moisture than the peas or vetch. It is, however, a hard plant to put under the soil in the spring, as the growth is very tangled.

Fenugreek also gets along with little moisture and has the added advantage of growing straight stems and being easy to plow in. It also offers no inducement for the chickens to eat either the seed or the growing plants. Horses and cows will eat it, however, and thrive on it. The seed of fenugreek forms the principle ingredient of many stock foods, and is responsible for the peculiar odor of these foods.

Canadian field peas grow a fine lot of vine, but have two failings. They are very susceptible to the attacks of green aphis, which render the plants weak and of poor growth. Then if they are let go short of water the vine will die just above the ground and will readily break off and make plowing almost an impossibility.

For summer planting, the cowpea seems to have the first place in the favor of the growers who have tried the summer crop, but buckwheat is coming in for its share of favor in the last year or two.

The writer has some fine samples of cowpeas growing this summer. The growth at two months old is much better than winter vetch at the same age, and the vines have not reached their total growth yet. They are just putting out runners and coming into bloom. The water these plants have received has not been more than 10% in excess of that the orchard would have needed, and the trees have not shown the least shortage. On the contrary, they seem to look better than usual, and the saving of team work more than offsets the extra cost of water, besides the added advantage of accumulating humus instead of burning it out.

In choosing a suitable seed for fall planting, consider both the top and the root of the full-grown plant, as the root has an important bearing on the value of the crop as a soil improver. The root has a valuable mechanical effect on the soil, while the plant is still growing, by the numerous little holes which are bored down through the subsoil, even though the plow sole is quite apparent. These little tunnels let the winter water flow to the lower soil strata, and serious run-off is prevented. It is quite a common sight during heavy rains to see the water pouring in torrents from a "clean culture" orchard, while the orchard next to it with a cover crop is not shedding any of the rain.

The root system is also to be reckoned with in the total value of the crop when the plowing-in takes place. The roots are not seen, as are the tops, but they represent a good percentage of the total weight of humus-forming matter.

These properties of root and top are probably found at their best in the vetch, as compared with the other varieties of winter crops.

Planting.—The ground to be planted should be prepared for the seed by irrigating either in furrows close together or by the flooding system, the object being to get the seed bed wet all over. After irrigating, the ground should be well worked up to prevent loss of moisture, and the seed put into the ground and a new set of furrows made to provide for future irrigation. There is no use in thinking to raise good cover crops without irrigation. There is not enough continuous rain in the citrus belt to do it.

The amount of seed varies widely with the opinion of the grower, ranging from 40 lbs. per acre of orchard, to as much as 100 lbs. The most general practice seems to be 50 lbs. for planting one way and 75 lbs. for planting both ways.

The method of seeding is also much varied. The drill is much used, but has the drawback of leaving the seed unevenly covered when the furrows are made. The seed under the furrow is uncovered, or at best only very slightly covered, while the seed between the furrows is so deep that much of it is long in coming to light.

Some practice sowing broadcast, and harrowing in, then when the furrows are made the seed is all in the earth between the furrows, where the soil is soft and moist, and is more evenly covered.

Irrigate as often as needed, but be sure that the plants get a good start in the first two months of their growth. This will insure a plant growth worth plowing in while there is plenty of moisture.

There would seem to be too much hurry in the matter of plowing in. I have seen vetch plowed in when there was little fibre in the stems of the plant and would disappear in a few days, while orchards in which the plowing time was delayed until the crop was more mature, the humus supply was much increased and the mechanical condition of the soil so much improved that there was no trouble this past summer to make the irrigation period eight weeks instead of thirty days, which had been the practice. In the latter orchard the growth stood about six feet high when it was plowed under in April, while in February it was not over two feet. Early plowing is the easiest, but the late plowing gives the best results from the standpoint of the cover crop.

There has long been a fancy in the minds of fruit-growers that late plowing was bad for the trees. The trees in the orchard where the late plowing was done have not shown the slightest sign of trouble, and show no wilt on the eight-week period for irrigation, where they would not hold up longer than thirty days a year ago. The reason is that this year the soil is a sponge, and last year it would settle down after cultivation.

Each grower should work out the matter of time of plowing to suit his own case, always remembering that the more mature the plant the more the humus production. In the same way, each should work out the question of summer crops. If there is absolutely not enough water, don't plant summer crops. But if water can be bought at a reasonable price, the crop will soon pay for the water required to grow it. Remember the crop saves much water by the prevention of evaporation.

The Beginning of the State Fair.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

With a few exceptions, exhibitors were ready to start their task of entertaining thousands of State Fair visitors Saturday, September 13, and from the size of the attendance on the opening day their work is well cut out for them.

To an ordinary layman, it would seem that the Fair directors have provided educational exhibits for all kinds and classes of visitors.

COUNTY EXHIBITS.—The Agricultural Pavilion is filled with attractive booths from counties as far north as Shasta and as far south as San Diego. In size, the southern California exhibit is larger than any other, due to the fact that all of the counties below the Tehachapi combined their exhibits and for a diversified exhibit it is hard to beat.

Merced county has a unique booth in the shape of a huge sweet potato, which crop that county is noted for; Napa has made an attractive showing by including a mountain scene with running water. San Joaquin has the largest space of any single county which is well filled with attractive fruits, vegetables, etc. Taken as a whole, the Pavilion affords a great deal better show than last year's, and the different exhibitors are deserving of much credit.

MANUFACTURERS AND OTHERS.—The Manufacturers' Building contains over 50 exhibits showing almost everything used along household lines, all of which are very instructive and entertaining. It has been necessary to use a large tent annex to accommodate the exhibits of this nature this year.

The Machinery Hall shows the advancement made in gasoline engines and pumps during the year and is full of popping noises and flowing water which attracts good-sized crowds of farmers interested in irrigation and especially from those districts suffering most from this year's drouth.

The heavy machinery exhibit, including the tractor engines, harvesters, etc., is shown in the open where room is furnished to give working demonstrations.

These exhibits are becoming larger each year, indicating that more interest is being taken in this class of farm machinery.

The dairy machinery and equipment exhibit is far larger this year than that of last, and several of the supply houses have daily working demonstrations on the grounds.

POULTRY AND LIVESTOCK.—The poultry show is smaller in number of birds shown than that of last year, due very likely to the hard year on poultrymen generally, but this reduction in exhibits has not detracted from the quality. The Bantam and pigeon exhibitors have put up a fine show and deserve much credit.

Taken as a whole, the livestock show is better this year than last, some breeds being better represented and some not so well.

In the draft-horse divisions a good-sized showing of Percherons, Shires, and Belgians is being made and promises to bring out considerable competition.

The Saddle Horse classes are all well filled, and it is predicted that more interest will be taken in these divisions than is usual.

Several new entries are made in the mule classes and the showing is equally as good as last year.

New exhibitors have been attracted in the beef breeds this year, which makes the showing of Herefords and Red Polled very good sized, but the Shorthorns are a little short in numbers.

In the dairy breeds the most notable increase in exhibitors is among the Jersey breeders, and it is safe to say this year's exhibit has never been excelled with that breed, either in quality or size.

The Holstein classes are filled with top notchers and show a great deal of advancement over past years. Several herds are present which were not last year, and the breed has been well taken care of.

Perhaps the largest showing of Guernseys ever exhibited at the State Fair is the one this year, showing the remarkable gains that breed is making.

As usual, the Dutch Belted cattle come in for a great deal of attention, this year's exhibit being better in quality than last year's.

The swine divisions this year are all well represented, and some new breeds are shown not heretofore exhibited. The Berkshire, Poland-Chinas, and Duroc-Jerseys exhibitors have all shown good judgment in their selections, and one noticeable feature is that overfitting has not generally been practiced this year. A new feature, which was badly needed, is a hog judging enclosure which affords shade for the judges and stock.

American Merinos, Rambouillets, Dorset and Shropshire sheep make up the classes in the sheep divisions. For quality the show this year is equally as good if not better than some of the larger Eastern shows, and indicates that sheep-breeders have great confidence in the future of the industry.

The poultry and pet stock were judged September 13. The draft horses, beef cattle, Holstein cattle, and swine judging started on Monday, and the Jersey cattle Tuesday. A full report of awards will be given in next week's issue.

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Farming on Truckee-Carson Project.

[Written for the PACIFIC RURAL PRESS by D. L. SCHRADER.]

After spending some three weeks among the farmers of the Truckee-Carson River Project, we have been able to get some facts concerning this vast section of land, part of which was thrown open for homesteaders six years ago. These facts should be of interest to our readers as it brings out the methods used in a district that has made large strides in an agricultural way in a short time.

The Carson Sink Valley, most of which is included in the Project, lies almost entirely in Churchill county. The county seat, Fallon, is about the center of the valley, is eighteen miles from the Southern Pacific Railroad and is connected with a branch line from Hazen. The valley's greatest length east and west is 50 miles; its greatest width is 25.

There are two very distinct kinds of soil in this valley. That part lying some distance from the river and in the upper portion of the valley is a very light sandy loam, and that part lying along the river banks and the section of the country adjacent to the Carson Sink and Lake varying from a heavy loam to almost adobe.

One very noticeable feature of a great part of the Project is the absence of any hard-pan or clay stratas underlying the soil. In some sections a strata of clay is found at a depth of 20 feet. This has its advantages and disadvantages; it makes drainage a very easy problem in most sections; but it also requires a great deal more water for irrigation.

The government has built a splendid irrigation system and at present is irrigating 30,000 acres. They obtain the water from the Carson and Truckee rivers. They are at present constructing an immense retaining dam at Lahonten on the Carson river. The object is to hold back the spring floods that come down the river and when it is completed it will impound 200,000 acre feet of water and will make possible the irrigation of over 200,000 acres of land.

The rotation system of irrigation has been adopted; water being run trough the ditches to one section for seven days and to another section for the next seven. As the elevation in the Carson Sink Valley averages about 3900 feet, the growing season is necessarily short, extending from about June 1 to October 15, varying in different years. The average summer temperature is from three to ten degrees below zero. Owing to the extreme dryness of the climate, the average moisture precipitation is about three inches. On account of the short season, the crops that can be profitably grown are necessarily limited.

Alfalfa, of course, is by far the most important crop. It seems especially adapted to the higher, sandier soils; but also does well on the heavier soils. One of the most noticeable features of the alfalfa grown in this valley is its great feeding value. It seems to contain a great deal more sugar than California's interior valley alfalfa. Horses used to haul freight to the mines and other heavy work keep in splendid condition on a straight diet of alfalfa.

At present the greatest part of the hay is stacked on the ranches and fed to beef stock and sheep that are driven from the ranges to be finished up for the markets. The Western Meat Company, The Fallon Meat Company and the Nevada Packing Company are the largest feeders. W. D. Moody, one of the feeders, told us that he turned off beef in good shape in 42 days that had come in from the ranges in poor condition. This season when hay was bringing such high prices, about $8 a ton is realized in feeding this hay. There will be a large tonnage baled this year and shipped to California.

By far the most profitable way of feeding alfalfa is through dairy stock, and in a few years this will be the leading industry in the Project. The homesteaders in the past have usually lacked capital with which to purchase stock; but within the last year a number of good herds have been brought in.

The leading herd on the Project is owned by T. E. Mobley. This herd was bought in New York and contains 29 registered cows and heifers and the herd bull. One of these cows was a recent importation from the Jersey Isles. The herd bull has a splendid pedigree; his great grand dam being Blue Bell, the world record butter-fat cow in her time. Mr. Mobley is a former San Joaquin Valley dairyman, and is very enthusiastic over the dairy possibilities of the Project. He says that aside from the great milk producing qualities of the alfalfa the country is favored with dry open winters. when he came here from the San Joaquin, he brought a bunch of grade Jerseys with him, and without any shelter except the windward side of an alfalfa stack, kept up the flow of milk in good shape. One of the advantages, too, is the absence of muddy corals, for with the sandy soil and very light rainfall, the corrals are always dry.

A. L. Baker brought in a splendid herd of grade Jerseys from Oregon. His herd bull is a registered Jersey, Rioters Silver Chief, formerly owned by J. A. McBride of Jefferson, Oregon. Other good herds are owned by E. T. Dunbar, C. H. Hancock, Foresburg Bros., E. Dietz, C. J. Taylor and C. P. Whitney, most of them being grade Jerseys.

Corn silage has been used successfully to balance the alfalfa ration and a number of silos will be erected in the near future.

The finest sugar beets in America are grown here, and a $500,000 sugar beet factory has been erected with a 500-ton capacity. The beets contain a very high per cent of sugar. The crop from the whole Project, nearly 30,000 tons, averaged 18% last year; many lots going as high as 24%.

Very little of the raw land will grow beets when it is first broken up and leveled; but they do well on the old alfalfa ground. The land where they do the best is the heavier soil along the river and in the neighborhood of the Carson Sink.

The lower end of the valley produces large crops of barley, wheat and oats, and supplies the valley and the mining camps with these grains. This season the crop was especially heavy; but owing to a number of thunder-storms throughout August, a large percentage became lodged and shelled quite badly before it could be out in the stack. The potatoes grown here rank among the highest grown anywhere, and average about eight tons to the acre. Especially fine flavored cantaloupes are grown, and as they come into the market just after the Imperial Valley crop is off, they find a ready sale. J. C. Vannoy, the largest grower has worked up a splendid trade in San Francisco. The St. Francis and Palace Hotels, and the ferry boat cafes handle all that he can ship.

Very little fruit has been grown profitably as the spring weather here is very uncertain. Often in March a warm spell will bring out the buds, and then will be followed by a cold spell, which will nip the buds. This could be overcome to a certain extent by the use of smudge pots. What is grown is of a very fine flavor and quality.

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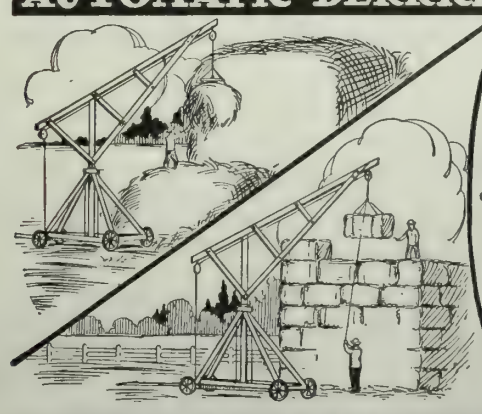

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Availability of Agricultural Credit.

[In harmony with our previously announced policy, we propose to keep the subject of agricultural credit and rural finance alive in these columns by presenting facts and discussions as space may be available. An illuminating discussion of the matter as existing abroad is found in the following quotation from the address of Senator Fletcher, president of the American Commission at the meeting of governors in Denver two weeks ago.—EDITOR.]

Credit is the keystone of the organization proposed by the American Commission. American farmers possess potention credit of vast amount. The task is to discover a plan whereby that credit may be made cheaply and easily available.

The credit requirements of farmers differ radically from those of merchants and manufacturers chiefly because returns from money invested in agricultural enterprises are much slower, though more certain, than returns from other enterprises. For this reason in many European countries financial systems have been established devoted exclusively to the interests of the farmers.

In the United States the farmer is dependent upon a banking system operated primarily in the interests of merchants and manufacturers, interests which are dissimilar to agriculture.

These European credit systems seem to be of two kinds, those providing personal, short-time credit for operating purposes and those providing long-time mortgage credit for works of permanent development and purchase.

PERSONAL CREDIT.—The most highly developed systems of short-time agricultural credit institutions are found in Germany. They are in the form of a pyramid composed of local co-operative credit societies, central societies operating generally over a province or administrative district and a main central society, as the apex, at Berlin.

Every farmer joining a local society assumes liability for its debts. In other words, he signs over his credit to the society and with this collective liability or credit as security the society contracts loans and solicits saving deposits. There may also be a cash capital subscribed or a cash reserve built up to serve as security in addition to the collective liability, but it is the liability which forms the chief security. The funds thus secured are loaned by the society to its members. A rate of interest is charged members on such loans sufficiently above the rate paid by the society to creditors so that the margin will cover the expenses of the bank and leave enough over for reserves or other purposes.

SECURITY.—In their operation it is necessary to insure two things, first, that creditors shall be protected in their loans, and second, that members shall be protected against the losses to which their liability subjects them.

The members are protected by placing every possible safe-guard about the loans to insure their repayment. This is done first, by admitting to the society only persons of good standing. Then it is provided that loans shall be made only for productive purposes, the borrower being required to state for what purpose he desires a loan. Further, the territory of operations for each society is limited to an area wherein every member knows every other member and is in position to find out whether the borrower is living up to the promises he has made to the society. The liability assumed by members is depended upon to keep them watchful of the affairs of other borrowers and in a rural community this check is extremely effective. Also, profits are either prohibited or so strictly limited that there is no incentive to speculation as a means to swell the income of the society. The officers of the society are so chosen that one set or board keeps check on the other. The liability of all officers insures their watchfulness. The general management of the affairs of the society are left in the hands of the general assembly of all members.

MAN BY MAN.—No matter what stock membership a member may have he is entitled to only one vote. His stock ownership is generally limited to a small amount. In this way these societies are insured a conservative management and maintain a surveillance over all loans made to members far closer than that maintained by the average commercial bank.

MEN ACTING TOGETHER.—All such local societies within a certain territory are combined to form a central society. A central bank is established which has, first, a small cash capital subscribed by the local societies, and secondly, the collective liability of its constitutent banks as capital. These central banks receive as deposits the surplus funds of local societies and loan them in turn to other local societies. In other words they equalize supply and demand between the local banks. They are hardly more than paper institutions. Their management is undertaken through officers chosen by the local societies through a representative system.

The main central banks act as equalizers for the central banks above mentioned. The effect of this pyramiding of the societies is to concentrate all of the borrowing and investing for a system in one big institution. The deposits, of course, are taken in by the local societies and as the societies develop these form the bulk of the system's resources. In Germany, such deposits have at times formed over 90% of all the funds required for loans by an entire system.

MORTGAGE CREDIT.—The worst feature of the farm mortgage in this country is in its individual character. An investor buying a farm mortgage must determine the sufficiency of the security offered by the land upon which the mortgage is executed; must attend to collections of principal and interest, must see that the taxes are paid and that the property is not allowed to depreciate in value to a point where the security of the mortgage is jeopardized. Obviously these responsibilities placed upon the mortgage make it necessary that he shall be a person in a position to keep posted with regard to the land upon which he has loaned his money. So long as this is true the market commanded by a farm mortgage will be restricted. Life insurance companies control practically the only source of money to which the farmer may turn in disposing of his mortgage besides the individual lender or his direct agent. The individual lender controls the market. Therefore American farmers today are paying one rate of interest in one State and another elsewhere. They do not secure the advantages which ability to compete in a wide market bring and since their mortgages do not form a liquid investment they are required to pay a higher rate than other borrowers who do not offer perhaps as good security.

OTHER DISADVANTAGES.—The second, and perhaps the greatest, disadvantage in

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the limited time for which a farmer may borrow money on a mortgage and the fact that he is required to pay back in a lump sum the entire principal of the loan at the end of that short time or else contract a new mortgage—that is, secure a renewal. An individual lender cannot be expected to place his money in a non-liquid investment for more than about five years. He may grant a renewal of the loan but he must reserve the privilege of calling in the loan at the end of that time and may increase the interest. It will require the farmer, who has invested the money secured from the mortgage in farm improvements, far more than those five years to realize the entire principal. These disadvantages will rest upon the farmer so long as he is obliged to sell his mortgage direct to the investor—in other words, so long as it is an individual transaction.

A European Method.—In Europe, a remedy for these disadvantages has been discovered which does not involve the government, except in its proper role as a controlling influence, and which does not jeopardize the safety of banks of deposit.

The effect of the European system is to break all connection between the mortgagor and the mortgagee. An institution is established which appraises the land of farmers desiring mortgage loans. The loans are granted by such institution which retains the mortgage. Then mortgage bonds secured by the mortgages, but as the direct obligation of the institutions, are issued. No one bond is secured by one mortgage, but each bond is lien against all of the mortgages. Thus the investor in place of buying paper secured by one farm and having to determine what sort of a farm that is, buys a bond secured first by a "pool" of mortgages and secondly by an amortization fund created by small payments made as the interest is paid.

They are issued payable to bearer; are generally listed on the exchange and so form a liquid asset. With these features the bonds sell at far lower interest rates than individual mortgages. The farmers are charged at a rate sufficiently above the rate paid on the bonds to clear a margin for the institution to pay expenses, build up reserves, or for other purposes as desired. But the expenses of operation of such companies are so small in comparison with the volume of business done that this margin of profit may be taken by the institution and still the money can be loaned to farmers much cheaper than they can secure it for themselves. This is the first advantage brought by such institutions—cheaper interest rates.

How the Bonds Work.—These mortgage bonds run for an indefinite period. Each year the farmers are required to pay, besides the interest, a certain percentage towards reducing the principal of the loan. This money is used by the institution to buy up bonds from the market. Thus if an institution issues $100,000 of bonds and loans that amount on mortgages, the mortgagers each pay the institution $5,000 to reduce the principal of their loans.

This money is used to buy up bonds. In 20 years the entire issue of bonds would be bought up. It is in this way that all European mortgage loans are paid up. Sometimes mortgages run for fifty or seventy-five years. The bonds are retired by lot, the company generally reserving the privilege to to buy them in at par or at a slight premium. Also the payments of the mortgagors now are generally the same each year, a larger portion of the sum going toward principal and a smaller towards interest as the principal is gradually reduced. For instance, it is figured that a farmer having a loan at 4.3 per cent and paying each year 6.56 per cent would wipe out his loan in 25 years. This practice called amortization is of the greatest value to farmers for it makes their payments on principal consistent with their income from money expended on agricultural improvements. So long as the farmer meets these annual payments the mortgage will not be foreclosed. Also, the interest rate can never be raised during the life of the loan.

Thus we see that such a system reduces interest rates, makes the demands upon the farmer consistent with his income, eliminates commissions, protects him from foreclosure, and from an advance in interest rates. It changes a mortgage from a burdensome debt to an advantageous form of credit—an investment.

Why the Farmer Needs More Capital.—This plan of mortgage credit would mean more money for machinery, more for purchasing new land and for developing poor land. It means fewer tenants and more owners. It means better rural life conditions. Obviously it would be unprofitable to attempt to develop land on money borrowed under such disadvantageous terms as now prevail. Not only are the rates higher (that is the smaller part of the problem, I believe), but the farmer is forced to pay back his loan before he can make his farm pay that amount. That is the really great burden upon the farmer. That is the reason, I believe, why nothing more is done towards placing under cultivation the abandoned farm lands of the east and towards opening up the lands of the west and bringing more lands into cultivation in the south. The example of Germany in this respect is astounding to Americans. Our Commission was told that Germany is supporting today 67,000,000 people; is producing 95 per cent of the food they consume and has definite hopes of increasing that percentage. This is being done on land centuries old that obviously was never particularly fertile land. They are doing this through three influences—credit, cheap labor, and scientific methods. Of course, cheap labor, as it is known on the continent, is not to be considered in this country during this generation. I believe that we have the machinery to spread scientific methods. What we need above all is the credit necessary to bring those methods to practical fruition upon the maximum number of acres. As compared to Germany's record, we find in the United States the number of tenants increasing, the farm mortgage debt increasing, exports of foodstuffs diminishing, imports of such products increasing, the movement from the country to the cities and towns augmenting, production of food supplies approaching steadily to the point where we will have none to export, and it will soon become a question of supplying the home demand.

It is true there have been rises in land values and advances in the price of foodstuffs, due, at least, to a large extent, to the disproportionate increase in population in comparison with the increase in agricultural productiveness. It does not represent sound agricultural progress.

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AGRICULTURAL REVIEW.

With the Grape Growers.

Word has come that the Pomerene amendment, taxing brandy used in making sweet wines, has been defeated, and that matters will stand as at present Prices have been good before, and the defeat of the amendment is expected to help some more. This is a help to the Associated Raisin Co., as poor raisin grapes will be sold to the wineries and raisin quality kept up. Prices quoted by the Raisin company are going up, and the season looks very profitable. Tray count still continues to show a greater shortage than was expected.

A Sacramento valley advertisement offers $13 per ton for Zinfandel grapes, $15 for fancy Muscats, $12 for Muscat culls, and $12 for Thompson Seedless culls.

Tokays are leaving Lodi at the rate of about 30 cars per day. F. o. b. prices have been around 75 and 80 cents.

There is a considerable discrepancy in grape prices quoted from different sections. A Lodi account makes wine grapes bring $12 and upward, Manteca $12, and Fresno states that $10 is the best to be expected. In the coast counties $22 and $25 is being paid (a result of difference in quality).

Fruit News.

As was the case last year, the almonds of the California Almond Growers' Exchange were taken up almost as soon as the prices were named. All that is needed is to ship the nuts. The prices were approximately 4 cents above those of last year, the crop being smaller.

The output of the Pajaro valley is estimated at 1,000 cars of apples this year, with a few estimates running somewhat higher. There will be approximately 250 cars of Bellefluers, 300 cars of Newtowns, and 450 cars of other varieties. A few Gravensteins and Skinner Seedlings have already been shipped.

Peach shipments from Gridley will be over in just a day or so. About a car a day has been going out for the past two months.

Dried peaches, according to a Fresno account, are only bringing growers about 4½ cents. Only a few are being sold at this price, but farmers who need money are letting them go. From Fresno also an upward tendency of dried figs was reported, sales being made at 4 cents.

A new olive pickling factory is to be established at Oroville by the California Ripe Olive Company.

According to the estimates of the Walnut Growers' Association, the crop this year will be 13,000 tons.

Horticultural Commissioner Schulz of Tulare announces that he will not be a candidate for office when his term expires in November. His decision is regretted by Tulare fruit men, but other duties make it necessary.

The fig harvest has started in earnest in Butte county.

The Santa Rosa Cured Fruit Association has put its packing house into operation.

The first carload of dried prunes to be shipped from Chico was sent off for Germany, Monday, September 8.

Commissioner Lamiman of Shasta county reports that the crop conditions in his county have been good, though more work will have to be done in attacking pests. The hot weather recently cut down the prune sizes and yield.

Some estimates of coming citrus shipments made by railroads in Riverside and San Bernardino counties are: Redlands, 3500 cars; Ontario, Upland and Narod, 2600 cars; Rialto, Bloomington, Etiwanda and Cucamonga 1685 cars; Riverside, Highgrove, Grand Terrace, 1180 cars; Arlington, Casa Blanca, Prenda, Pachappa, 1160 cars; Corona, 1600 cars; Highland, 1650 cars; and other districts to make 13,985 cars.

Dried blackberries are being put up in large quantities by Mrs. Laura E. Barlow, Sebastopol. Mrs. Barlow is buying all offered at $32.50 per ton.

Tulare county reports the gathering of large quantities of orange buds by southern California nurserymen.

C. H. Grassly has resigned as manager of the Central California Citrus Exchange to become manager of the Semi Tropic Exchange of Los Angeles. R. H. Shoemaker has been appointed in his place. Many other changes have been made at the annual meetings of various exchanges held recently.

General Agriculture.

Hop picking has ended on the Nord and river branches of the Harry Fraser Hop Co. in Butte county. On one ranch 300 pickers were employed and on the other 150. The crop was rather light.

Live Oak, Sutter county, shipped out over 5000 tons of alfalfa hay this season.

Six cars of sugar beets per day are being shipped from Meridian, Sutter county, to the Alameda Sugar Co.'s factory at Alvarado.

On the W. D. Lewis ranch, in the Tulare Lake district, four 25-foot cut harvesters are employed. The yield is quite heavy on the 4,000 acres of the ranch.

With one gasoline tractor outfit and a combined harvester, J. F. Shaeffer finished the 1913 harvest season in Butte county with a record of 50,000 sacks of grain. He will also do a lot of rice harvesting.

Harvesting of 4,000 acres of blackeye beans and 17,000 acres of lima beans has begun on the San Joaquin ranch near Santa Ana, Orange county.

Harvest is well under way in Klamath valley, over the California line in Oregon. Spring wheat is producing well, although winter wheat is somewhat below normal. Potatoes are going about 300 bushels per year.

The monthly report of Commissioner Galloway of Sonoma county states that crops have been fair, though less than last year, but that prices have been sufficient to make the season quite a profitable one. The greatest pest of the year in the county was grasshoppers.

The Lima Bean Growers' Association has issued a statement saying that the production will be nearly up to that of last year and the quality excellent, but that it will be more difficult to prevent the prices from dropping. Growers are called upon to either support the association or go slow about selling. With proper selling the prices will be very satisfactory.

In the last 60 days 2000 cars of potatoes have been shipped out of the delta region, or 30% of the fall crop. The yield and acreage are both less than last year, but prices are much more satisfactory, as is the case with onions.

An enormous loss to the United States corn crop occurred through hot weather from August 1 on, which will make one of the smallest crops on record and greatly diminish, among other things, the meat supply of the country. The corn estimate is only two-thirds of normal. Most other field crops are also shorter on account of the heat in the East.

S. C. Davis, of Glenn county, is harvesting 3½ acres of corn which will run 50 to 60 bushels per acre. It was irrigated twice.

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Commissioner Ley of Glenn county claims to have had much success in subduing the alfalfa butterfly by use of an insect parasite.

Irrigation Progress.

Irrigation on the Orland project has closed for the season. The reservoir is to be enlarged and other extensive work done which made it necessary to let the water out and give as much time as possible to do the work in. The capacity of the plant will be greatly increased by the alterations.

Irrigation has been going on over a number of the laterals in the Modesto district, but the end of the season is close at hand unless rains in the mountains supply more water.

Miller & Lux have started work on the development of a canal to irrigate 200,000 acres north and east of Los Banos. The new canal will stretch from the Salt slough canal, a couple of miles north of town, to the Fremont ranch, northeast of Gustine. The land under the new canal is some of the richest of the Miller & Lux holdings.

The suit which was threatened by the supervisors of Lake county against the building of the Yolo Water & Power Co.'s dam above Clear lake will not be brought, and the work on the dam will go on.

The irrigation season around Gridley, Butte county, officially closed more than a week ago, though there is still water in the canals for those who wish to use it.

E. W. Stanton, of Sutter county, has completed one of the largest and finest irrigating plants in the State. It has cost $10,000 and covers 240 acres. Underground concrete pipes convey the water all over the tract, a standpipe coming to the surface every few hundred feet. The tract has been prepared for alfalfa, trees and vines.

A great new irrigation project is being arranged by the C. A. Hooper Company of Pittsburg, Contra Costa county. Water will be pumped from the San Joaquin river to irrigate 8000 acres of the Rancho Los Medanos.

It is planned to raise the river levee considerably between Colusa and Grimes on Reclamation District No. 108.

The fourth well on the Oro Loma property on the west side of Fresno county has been completed and gives a flow of 1500 gallons per minute.

A large irrigating plant comprising three 16-inch wells in series has been completed on the 500-acre ranch of the Misses Shephard near Gilroy.

It is announced that irrigation on the Sacramento Valley Irrigation Company project will be stopped October 1.

Farmers in Merced county are planning an irrigation district to take over the Crocker-Huffman Water Company's private system and enlarge it to cover 270,000 acres. A storage reservoir will have to be constructed to make this possible.

A contract to construct a levee to protect 14,000 acres of lake land west of Corcoran, Kings county, has been made by the El Rico Land Company.

A convention at which the important irrigation matters relating to the San Joaquin valley will be held by the San Joaquin Water Problems Association at Hanford in November. Several leading irrigation authorities will be present to discuss important subjects.

The Red Bluff Chamber of Commerce is conducting a campaign for the construction of a great storage dam in Iron canyon, from which a vast amount of irrigating in the Sacramento valley can be done and floods checked.

A formal call for a meeting to form an irrigation district in Butte county has been made. Water will be taken from the middle fork of the Feather river and 60,000 acres of land irrigated.

The irrigation district being formed near Tracy may be enlarged to include 32,000 acres. Another district is being spoken of at Churn creek, Shasta county.

British estimates of the wheat crop in 13 leading countries gives about a 6% larger yield than last year.

Miscellaneous News.

Bee Inspector Wagner of Imperial has declared a quarantine on bees from sections affected with European foul brood.

San Luis Obispo county supervisors recently granted 219 claims for bounties on squirrel tails, of which 25,452 were turned in, the bounties reaching $1272.60. During August $230 was paid as bounties for the killing of 115 coyotes.

A large amount of Natomas Consolidated land may be taken from the market to be farmed directly by that company.

The Santa Rosa Poultry Association is paying within a cent of quotation for eggs. The association is doing a big business with Honolulu.

From Oroville it is stated that Indian weather signs indicate an early winter.

Several agricultural institutes were recently held in sections of Humboldt county and were largely attended.

W. J. Dutton of Suisun has purchased 1000 acres of marsh land north of Vallejo, which he will reclaim.

The farmers of Trinidad, Humboldt county, have organized a farmers club.

Successful fairs have recently been held at Ferndale, Humboldt county; Ukiah, Mendocino county; St. Helena, Napa county, and elsewhere. That at Ukiah was a hop festival and at St. Helena a vintage festival.

The Secretary of Agriculture has granted a water-power permit in the Lassen national forest to the Sierra Electric Power Company. The site is on Mill creek, 25 miles east of Red Bluff.

The Orange County Preserving Company will make a large run on tomatoes this year. About 100 persons are employed and $8 per ton is being paid for the tomatoes.

UNIVERSITY OF AGRICULTURE PLANS.

At the meeting of the regents of the University of California early last week, several steps were taken for the development of the work of the agricultural department that should prove of great interest to every farmer in the State. Prof. B. H. Crocheron was appointed to supervise farm management, field operations and demonstrations, half of his salary to be paid by the U. S. Department of Agriculture. He will have charge of the work of the county advisers who will be appointed by the University and counties to give detailed help and instruction to farmers in the counties. The University and the U. S. Bureau of Soils will also co-operate in a State-wide soil survey which will be of great value in aiding in selection of crops in different localities. Dr. Elwood Mead, a noted authority on irrigation and in charge of the development of Australia's irrigation work for a number of years past, will return to California to be professor of rural institutions. The regents also appointed Dr. Thomas H. Hunt, Dr. J. H. Webber, and Prof. J. E. Coit to select a site for the citrus experiment station and school of tropical agriculture to be established in southern California. To confer with these the following committee of growers was named: E. A. Chase, Riverside; C. C. Chapman, Fullerton; John Lindley, Azusa; C. C. Teague, Santa Paula, and R. C. Allen, San Diego. Bids were advertised for much construction work at the University Farm at Davis, and a number of appointments to the College of Agriculture were made.

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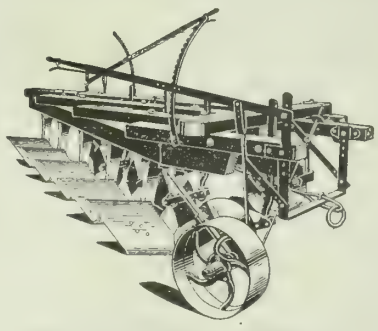
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From Bookkeeper to Dairyman.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The question, "Do city men make successful farmers?" seems to be answered in the affirmative by the experiences of J. N. Bomberger, of Modesto, whose story brings out facts that are profitable both to the city man and the farmer who has for years traveled in an old-style rut.

In 1901 Mr. Bomberger was employed as bookkeeper for a feed store in an Eastern state. His first interest in farming was manifested when he noticed how little farmers actually knew about the feeding value of mill feeds. Some knew why one feed was more valuable than another at a given price, but the majority of buyers did not and as it was customary for other business concerns to know the comparative value of a raw product, it struck him as peculiar that feeders of stock did not.

Solely through curiosity at first, literature and books were purchased and a close study made to ascertain the relative merits of the feeds chiefly handled by his firm. Through this literature, a desire was made to carry some of the theories outlined into actual practice, and in doing this it was decided that in changing occupations a change in location might also be advisable, as he would not be handicapped by local scorn in a new country. As a consequence, he moved his family into a Middle Western state, but having only a small capital, he did not purchase any land, and, through sickness, spent almost all he had saved.

After spending a year in the new location, he was advised by doctors that the climate there was too severe, and that he must move to a milder climate. With less than $200 left of his savings, tickets were purchased for California, the first stop being made at Los Angeles. As no farm work was obtainable there, and as he was determined to keep out of more bookkeeping work, he and his wife accepted an offer for work on a ranch near Fresno. After three months' work there, ten acres of supposedly seeded alfalfa land was rented, but it was soon found that the revenue was not sufficient, so it was given up. Hearing of the success of dairying around Modesto, the next move was made to that place and employment secured in a lumber yard. After a few months at that work, a twenty-acre ranch near Hughson, Stanislaus county, was rented.

It was here that the first real experience in growing alfalfa was obtained, as hay was the only product, but it was soon found that more money could be made in feeding it than by selling it to the market, and also that the fertilization by the former method was worth a great deal in raising good crops. As his capital was still small, he could not purchase cows outright, and when a nearby alfalfa ranch of sixty acres, fully stocked with dairy cattle and work horses, and well supplied with dairy equipment, was offered at a yearly rental of $600, with quarterly payments, location was again changed. The stock and implements were bought for $1630, also on easy payments. The former owner stated that he was quitting as there was not enough money in it for a comfortable living, and it soon became apparent that under his system the wonder was that he made anything, as a great many of the cows were actually losing money and the land was not producing enough hay to furnish feed for the stock kept.

Through his continued supply of good literature, the new owner found that the Babcock tester would distinguish the star boarders from the paying ones, and after applying this method, considerable culling was done. Through literature it was also found that a saving in hay could be made by feeding it green, so for the first year, through culling the herd and soiling the alfalfa crop, the income was very satisfactory—so much so, in fact, that the $1630 indebtedness for stock was paid off through the cream check, and $600 worth of hay was sold, which paid the rental.

After three years' of experience and income had been gained in the last-named place, the owner wanted it back, as he saw that money could be made on it if properly farmed.

At this time Mr. Bomberger, having gained some reputation as a good farmer, was offered a 200-acre alfalfa ranch on shares, and after managing it for four years accumulated enough capital to purchase the 65 acres he now has.

Being benefited by his previous experience, he at once purchased a string of cows and started a dairy. His former operations had also brought out the fact that by cutting soon after the alfalfa blossomed, more hay could be produced to the acre, but the objection to this method was that the hay was too coarse for good cow feed. In order to overcome this, concentrates were fed, and it was learned that by so doing, the milk flow was a good deal more than when straight alfalfa diet was used, and that the total yearly returns through the sale of hay and butter-fat were larger.

As the new ranch was mostly subirrigated, it naturally produced good crops of hay at a minimum cost, but it was thought that by heavy fertilization and a systematic rotation of crops, this yield could be increased.

By carrying out this plan, an average yield of 10 tons to the acre has been gained, and with the subirrigation before mentioned, the cost of producing is comparatively low.

Having been a bookkeeper, the benefits of systematic records were easily seen, and as the Babcock tester had proven a money maker in his former operations, they were both incorporated as being part of the regular routine.

Every cow's milk was tested and weighed twice a month, an account kept of the amount of feed consumed, monthly cost of labor for milking, and amount of skim-milk. By having this set of records, it was easy to find the leaks, if there were any, and also to know the reason why.

Through experimenting with different feeds and by keeping well posted through agricultural literature, it was not long before he was considered almost an authority on dairying, and his advice was sought by farmers who had spent a lifetime at the business. At the time of our visit two silos had been erected and filled, twenty acres were planted to corn for ensilage, and alfalfa was growing rank everywhere one walked.

The dairy herd has been constantly bred up with pure-bred bulls, and averaged last year 350 pounds of butter-fat per cow. In view of the fact that the foundation for this herd were grades picked up wherever possible, it would seem that his methods need no further commenting upon.

The hog lots are also run systematically, and only the sows which have large litters of good thrifty pigs are kept. In this way the revenue from hogs gradually increases, and through the records kept the net profit can always be ascertained.

Ten years have elapsed since the poorly paid bookkeeper of the East started along agricultural pursuits in California, and they have been most profitable ones, for in summing up his success as a farmer, he stated that he had enjoyed an average yearly income of $3500 ever since the Southern Pacific landed him across the Colorado river. As he has only been a land-owner for a small part of the ten years, the rise in value of his land has only been a comparatively small item. When asked why he had been successful, he stated: "Because I have been one of those much-scorned book farmers." In making such an assertion, however, it must be understood that the literature has only acted as a means of suggestion, and it has required good hard brain and physical work to carry them out.

In concluding, we might say that what Mr. Bomberger prizes more than anything is his cheerful home and a houseful of healthy children raised on the farm and therefore vigorous.

COW-TESTING REPORT.

The Stanislaus County Cow Testing Association is now well along in its second year's work, and the results are proving very satisfactory. The report for August, while not quite as high as that of last month, is very good, taking into consideration that many of the high producers are well along in their lactation periods.

The work of this and similar associations has done much more toward building up the dairy herds in their respective communities than any other one thing, and should command the support of every dairyman who hopes to receive the most revenue from his investment.

The following is the list of cows which made 45 pounds of fat or more, for the month of August, as given by Supervisor W. H. Moebus, of Modesto:

Owner.	Lbs.	Milk test.	B. F.	Breed.
Blake Vent	1392	4.6	64.0	Jersey
Walter Aspden	1416	4.2	59.4	Holstein
J. S. Rhodes	1506	3.9	58.8	Holstein
Edwards & Tibbets	1734	3.3	57.3	Holstein
C. H. Rhodes & Son	1227	4.4	54.0	Holstein
Blake Vent	1398	3.8	53.1	Jersey
Blake Vent	936	5.6	52.5	Jersey
Edwards & Tibbets	1071	4.9	52.5	Jersey
J. S. Rhodes	1314	4.0	52.5	Holstein
Rancho Dos Rios	1023	5.0	51.3	Jersey
D. E. Cornwell	1764	2.9	51.v	Holstein
C. H. Rhodes & Son	1272	4.0	51.0	Holstein
Bracewell	1161	4.2	48.9	Jersey
Rancho Dos Rios	915	5.3	48.6	Jersey
W. L. Bowen	942	5.0	47.1	Jersey
Edwards & Tibbets	951	4.9	46.5	Jersey
Blake Vent	951	4.9	46.5	Jersey
C. H. Paine	759	6.0	45.6	Jersey
N. C. Lollick	870	5.2	45.3	Jersey
N. C. Lollick	1185	3.8	45.0	Jersey
C. H. Rhodes & Son	1182	3.8	45.0	Holstein

HOGS IN A VINEYARD.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

That fruit-growers can raise swine successfully is now well established in most sections, but there is still a large shortage of hogs on fruit ranches. More interest is being taken in this phase of fruit raising at the present time than ever before, an example being the fruit and hog ranch owned by W. A. Young near Lodi.

There are 150 acres in the ranch, mostly in vineyard and orchard, and which are well provided with water pumped by three electric-driven pumps. The supply of water developed by these wells has proved that a good supply is to be had in that district at a small cost, and the benefits are easily seen in dry years like the present, for while most unirrigated vineyards in that district will have a short crop, the prospects were for a bumper crop on this ranch in August.

Finding that having all of the eggs in one basket was a poor practice, Mr. Young decided on planting some alfalfa as a by-product, and, having been a successful hog breeder in the East, it was only natural that swine should come in for consideration on the present ranch.

Poland-Chinas were selected, as that had been the breed used by him in the East, and at the present time there are about 75 head, sired by the boar, Young's Wonder, a three-year-old. This boar, in ordinary breeding condition, weighs about 600 pounds, and to demonstrate the size of his bone, Mr. Young measured it in our presence and showed us that it was 16 inches in the biggest and 8 inches in the smallest part of the leg.

With this sire it is little wonder that the young stock are good-looking individuals, but as he is related to most of the herd, he will be disposed of and a new boar purchased from Link Lukens of Indiana will take his place in the future.

Good sanitary hog-houses were erected, and, due to a lack of milk, considerable mill feed and grain is fed in connection with alfalfa; but since finding that hogs pay well in California, especially pure-breds, it has been deemed advisable to keep some dairy cows, so from this time on a 25-cow dairy will be run in connection with the other branches, partly to furnish a good cheap hog feed and partly as a means of receiving the maximum returns from the alfalfa. The fertilizing value of the dairy and hogs will greatly aid in producing large crops of fruit, and altogether the establishment seems a model of diversified farm methods.

One point brought out most forcibly is that when stockmen come from the East or elsewhere to enter into fruit growing, our livestock resources appear so promising that some branch of it is usually entered into.

Goat's Milk for California Babes.

Our well known specialist in breeding milch goats, Col. Winthrop Howland of Medlands, has secured from Dr. Charles E. Ide, of the same city, a careful study of goats' milk for babes which is of wide public interest. Dr. Ide cites foreign opinions about goats' milk, and then gives prescriptions for its use, based upon the results of his own experience.

My experience in using goats' milk as food for infants has been limited to some fifty cases. Mr. Winthrop Howland, who has the largest herd of Toggenberg goats in the United States, has supplied the goats' milk that I have used in my practice. The ranch is situated five miles from Redlands and is equipped with modern conveniences which are necessary for a healthy herd of goats and clean milk.

To make a fair test of goats' milk, one must be sure that the milk has been prepared by the latest methods that are used in certified dairies. Under these conditions the milk is pleasant to the taste and has a digestibility second only to mothers' milk.

English Experience.—J. L. Strutton, in the British Medical Journal, writes that in Alexandria the matron of the hospital says that babies in that city are fed direct from the goats, that is, by having the mouths applied to the washed teats. The article goes on to say that the babies are rosy and plump, rarely cry, just eat and sleep. This direct method of feeding cannot be carried out as a general practice, but the clean milk from sterilized bottles will produce good, strong babies. In comparing goats' milk and cows' milk, Dr. Voelcker, analyst to the Royal Agricultural Society, says: "The cream globules in goats' milk are smaller than cows' milk, and as the milk is more concentrated than cows' milk, the cream globules are contained in a more perfect state of emulsion than in cows' milk, in consequence of which hardly any cream rises to the surface on allowing goats' milk to stand for twelve hours or longer."

An Argument from France.—It is this quality of goats' milk that explains the fact that it is more easily digested by young children than cows' milk. According to the report on this subject at the International Congress of Medicine in Paris some years ago, the following statement was made:

1. The curd of cows' milk forms a dense adhering mass, which by agitation separates into clots that are but slightly soluble. The curd of goats' milk, on the other hand, forms very small, light flakes, which are soft, friable and soluble like those of human milk.

2. The curd in both human milk and goats' milk, after agitation, is precipitated very slowly and incompletely, while the curd of cows' milk is precipitated very rapidly and completely.

3. Digestive ferments when goats' and human milk were experimented with, digested these completely in twenty hours, while cows' milk showed only slight advance after sixty hours. The goats' milk approximates more in composition and digestibility to human milk than any other animal.

Another very strong argument in favor of goats' milk is the fact that goats are free from tuberculosis. The fact that goats' milk contains more proteid than cows' milk makes the food value, without question, greater than cows' milk. It is a fact that bottle-fed babies as a rule are underfed; that is, the amount of proteid is lacking in sufficient quantity because, undiluted cows' milk cannot be digested by an infant until the tenth month is reached.

How to Raise a Human Kid on Goats' Milk.—In modifying goats' milk, it has been my policy to base my modification on a 5% fat basis.

All weights herein given are in ounces.

For the first month:

Goats' milk ½ ounce.
Boiled water, ½ ounce.
Lime water, ¼ to ½ ounce.

Feed every three hours.

Lime water is gradually diminished until the second month is reached, when the formula is changed to—

Goats' milk 1½ ounces.
Boiled water, 1½ ounces.
Mead's Depti Maltose, 1 teaspoonful.

Feed once in three hours.

I find malt sugar superior to either sugar of milk or cane-sugar in modifying goats' milk.

Third month:

Goats' milk, 3 ounces.
Water (boiled), 1 ounce.
Mead's malt sugar, ½ teaspoonful.

Feed every three hours.

Fourth months:

Goats' milk, 5 ounces.
Water (boiled), sufficient to bring fats to 5%.

Feed every three and one-half hours.

Each month after the fourth month gradually increase the amount of the feeding one-half to one ounce a month until eight ounces is reached. Then feed once in four hours. I find that eight ounces of goats' milk will satisfy a child of eight months and will continue to do so until the child has reached the twelfth month, when other food can be given in addition. My experience has been so satisfactory in using goats' milk that I want to recommend it generally to the medical profession.

A PROFITABLE BROOD MARE.

[Written for the PACIFIC RURAL PRESS.]

A pure-bred Percheron breeding establishment with only one brood mare, and she 27 years old, is something that very few sections in this country are able to boast of, but that such a thing is possible may be seen by visiting the ranch of C. Olsen at Geyserville.

There are about 1500 acres in Mr. Olsen's ranch, 35 acres being planted to vines, 12 acres to orchard, 10 acres to alfalfa, 125 acres to grain hay, and the balance is used for range purposes.

It is not the history of the ranch so much as that of the horse which is interesting. However, the outline of the ranch shows that considerable stock is necessary to do the farm work, and in doing this it has been found that the well-bred horse is the right kind to keep.

The mare above referred to was imported from France 25 years ago by Mr. Olsen and was used for teaming until she was 12 years old, when she was shipped to Alaska during the gold rush. While there she was used in hauling supplies and ores to and from the mines for eight years.

One would naturally suppose that so many years of hard service in all kinds of weather such as Alaska is noted for would so badly break down a horse of her age that she would be almost worthless in the end. Being a pure-bred of good size and having a strong constitution, quite the contrary was true, for while she had never been bred up to that time, it was decided after bringing her back to California that she could be used as a brood mare to good advantage.

The first year's foal was a stallion, and as he had been sired by a registered Percheron of good blood, the colt looked very promising, and has since proved to be one of the leading sires in the Geyserville section.

The three following foals were also stallions of equally good rank, making in all two blacks and two grays.

Mr. Olsen values these four stallions at several thousand dollars, and from their general appearance, especially the team of grays, they are well worth his price. A noted horse judge who has judged stock at all of the larger horse shows told the writer that as a team the grays were superior to anything he had ever seen from a physical and appearance standpoint.

Two years ago a mare colt was dropped, which as a two-year-old is a fine-looking individual. and this year twin colts were dropped, making a total of seven colts in the six years after an age of twenty years had been reached by the mare.

The performance of this grand old animal is surely remarkable and demonstrates the value of well-bred horses for the farmer's use. It is safe to say that this mare's colt production has been more in six years' time in financial returns than several scrub horses would be in an ordinary horse's lifetime, and as the heavy horses are most in demand, it seems that more farmers would find it profitable to have at least a team of high-bred brood mares. J. C. L.

BOTS HARMFUL TO THE HORSE.

Contrary to the prevailing opinion among farmers, the bot which infests the stomach of the horse is often harmful to both young and old animals, and may be especially disastrous to colts. The bot is the larval stage of the horse botfly. The botfly reproduces by depositing light yellow oval eggs, which are attached by the adult female to the hair of the legs, breast, and neck. The eggs hatch; then the horse licks itself and some of the small larvae are taken through the mouth into the stomach, where they attach themselves firmly to the lining.

By their parasitic tendencies, a large number of bots covering the lining of the stomach damage the interior of that organ, prevent digestive action, and in some cases cause the horse to remain in such a poor condition that death may ensue. It is probable that many cases of poor condition in horses thought to be due to worms are really due to heavy infestation with bots.

An effective treatment which will remove bots within 24 to 48 hours is as follows: The day preceding the treatment a small amount of hay and a moderate amount of oats is given in the morning; in the evening food is withheld and a purgative given—Barbadoes aloes, 1 ounce; or raw linseed oil, 1 pint. The day of the treatment, at 6 o'clock in the morning, give 3 drams of carbon bisulphide in a gelatin capsule; at 7 o'clock repeat the dose in the same manner; and at 8 o'clock give the third and last done, making in all 9 drams of carbon bisulphide in three gelatin capsules.

The above treatment is for the adult horse. For a yearling colt half the quantity of carbon bisulphide used for a mature horse will give the desired results.

If properly administered, the gelatin capsule reaches the stomach intact, but soon dissolves, and the carbon bisulphide rapidly evaporates, suffocating all bot larvae and other parasites with which it comes in contact, but not injuring the horse. Worms are quite often expelled as well. This remedy has been used by the Department of Agriculture with a large number of animals, and has proved successful.

BIG THINGS IN LOVELOCK VALLEY.

The biggest thing, in our estimation, is the size of the first cutting of alfalfa. As a general rule, about 30 pounds of wheat is sowed to the acre in the alfalfa after it has been cultivated in the spring, and the combination of alfalfa and wheat produces some wonderful crops. H. L. Stotser averaged nearly 5¼ tons to the acre on 276 acres, and the Riverside Ranch stacked just 562 tons off of 106 acres. We would hardly credit these statements until we had seen the stacks ourselves.

Next on the list are some of the immense alfalfa fields. W. C. Pratt has 1500 acres seeded, Mrs. H. L. Rogers nearly 2600, and there are quite a number of sections of alfalfa throughout the valley. In putting up the hay on these big places, very quick methods are used. On the Pitt ranch the wagons are fitted with a big net and are loaded with a Jackson stacker. At the stack, by the use of an immense derrick and four big horses to hoist, the load of hay is all taken up at once. Mr. Pitt informed us that with 10 wagons he has stacked 180 tons in a day of 10 hours during the first crop.

The greater part of the hay raised is used in the winter in feeding stock that is brought in by large firms, such as the Western Meat Co., Cudahy Packing Co., Armour & Co., Swift & Co., J. M. Levy & Co. of San Francisco, the Nevada Packing Co., and J. M. Taylor.

Owing to the scarcity of stock this year and the expected high prices in California, a good deal of hay is being baled and some is being shipped now, some realizing $12 per ton on the cars at Lovelock. Others are holding for better prices later on. D. L. S.

Elk have been found in the Uinta national forest, Utah, for the first time in many years. Since they are not from shipments from the Jackson Hole country to neighboring forests, the State and federal officials are gratified at this apparent increase in big game, as the result of protection.

CATTLE IN THE UNITED STATES

The following table shows the number of cattle (including milch cows), hogs (including pigs) and sheep in the United States on January 1 of the undermentioned years, as furnished by the Agricultural Department:

Years.	Cattle.	Hogs.	Sheep.
1913	56,527,000	61,173,000	51,482,000
1912	57,959,000	65,410,000	52,362,000
1911	61,225,800	58,000,600	51,809,000
1910	69,080,000	47,782,000	57,216,000
1909	71,099,000	54,147,000	56,084,000
1908	71,267,000	56,084,000	54,631,000
1907	72,533,996	54,794,439	53,240,820
1906	66,861,522	52,102,847	50,631,619
1905	61,241,907	47,320,511	45,170,423
1904	61,049,315	47,009,367	51,630,144
1903	61,764,433	46,922,624	63,964,876
1902	61,424,599	48,698,890	62,039,091
1901	67,804,022	62,876,105	61,605,811
1900	43,902,414	45,000,000	41,883,000
1899	43,984,340	38,651,651	39,114,453
1898	45,105,083	39,759,993	37,656,960
1897	46,450,135	40,600,276	36,818,643
1896	48,222,995	42,842,759	38,298,783
1895	50,868,845	44,165,716	42,294,064
1894	53,095,568	45,206,498	45,048,017
1893	52,378,283	46,094,807	47,273,563
1892	54,067,590	52,398,019	44,938,355
1891	52,895,239	50,625,106	43,431,163
1890	52,801,907	51,602,780	44,336,072
1889	50,331,042	50,301,592	42,559,079
1888	49,234,777	44,346,525	43,544,755

The decrease of cattle in the United States should always be considered in connection with the increase of population, which is more than 1,600,000 a year. We have fewer cattle and more people.

BEEF CATTLE THROUGHOUT THE WORLD.—This table gives the number of cattle in proportion to population in the leading countries of the world:

Countries.	Total number.	No. for each 1000 populat'n.
United States	58,000,000	630
Argentina	29,100,000	5,709
Australia	11,200,000	2,496
Austria-Hungary:		
Austria	9,200,000	320
Hungary	7,300,000	351
Bosnia	1,300,000	689
Belgium	1,900,000	251
Bulgaria	2,200,000	505
Canada	7,100,000	998
Denmark	2,300,000	804
France	14,500,000	367
Germany	20,600,000	318
Italy	6,200,000	179
Netherlands	2,000,000	344
New Zealand	2,000,000	2,020
Norway	1,100,000	456
Roumania	2,600,000	431
Russia	37,300,000	297
Servia	1,000,000	332
Sweden	2,700,000	500
Switzerland	1,400,000	380
United Kingdom	11,800,000	262

FOREST FIRES THIS SEASON IN CALIFORNIA.

The forest fire record for the present calendar year on the National Forests of California shows a remarkably small acreage burned over, and very few fires compared with former years. Up to August 16, there have been 609 fires on the 19 National Forests of the State, 88 per cent of which were extinguished before they had burned over ten acres each. The average acreage per fire to date is 31; the total acreage burned over is 18,929; and total damage $2,619.42.

This remarkable decrease in disastrous forest fires in California is due to the highly developed system of fire prevention maintained by the United States Forest Service which covers approximately 28,000,000 acres of the forest and brush area of California. The system comprises about 850 men in the field during the dry season; 90 lookout stations manned and equipped with fire detecting and locating devices; over 3,000 miles of government-owned telephone lines, and connections with an equal mileage of private lines; patrol stations; tool and supply caches; motorcycle and railroad speeders; and mounts for upwards of 750 men. It provides for the organization in advance of the fire season of all available volunteer help—some 10,000 men—for their speedy equipment and transportation to fire lines, and for immediate payment for services rendered. It is highly organized, and under strong centralized control. Its cost for maintenance and fire fighting varies from $150,000 to $250,000 per year, depending on the severity of the fire season, and through its efforts the fire losses of previous years are in fair way to be reduced to a reasonable minimum over about one-third of the merchantable forest area of the entire State.

NATIONAL FOREST RECEIPTS.

From Washington, the San Francisco office of the United States Forest Service has received a summary statement of receipts from all the National Forests for the fiscal year 1913, (July 1, 1912, to June 30, 1913 inclusive), showing the amounts received from each State and Territory in which National Forests are located.

The net receipts total $2,391,920.85. Of this amount $45,534.04 is returnable to Arizona and New Mexico for school funds, leaving a balance of $2,346,386.81 on which is calculated the 25 per cent payable to the States, and 10 per cent to be transferred by the treasury to the appropriation for roads and trails; this apportionment giving $586,596.70 to the States, and $234,638.68 to the reads and trails appropriation. The sale of timber is shown to be the greatest source of revenue for the year, with an aggregate total of $1,221,-187.65; grazing fees being next with a total of $999,369.16.

California comes well up in the list, with net receipts of $298,166.21 for the year—of which $104,357.17 reverts to the State. Timber receipts for California were $165,408.64, and grazing $96,808.30.

STOCKMEN SHARE IN MANAGEMENT OF THE NATIONAL FORESTS.

During the past fiscal year, according to a report of the U. S. Forest Service, 31 local organizations of stockgrowers using national forest ranges have applied for and secured the official recognition of their advisory boards by the forest service. This brings the number of associations officially recognized by the Forest Service to a total of 115.

Through the medium of these advisory boards several thousand stockmen who graze stock upon the national forests now take an active part in discussing all problems of forest administration which affect their interests. The result, states the forest service report, has been the elimination of misunderstanding regarding the requirements of the stock interests and an improvement in methods of range control which has won the endorsement and approval of the large majority of the persons who depend upon the national forests for the pasturage of their stock.

Two of the stockmen's associations are national in their scope, and one is a State organization. The remaining 112 are local organizations. The stockmen have, it is said, been successful in securing advisory boards composed of broad-minded, unselfish men of wide practical experience who have worked for the best interests of their industry, but at the same time have given intelligent consideration to the need for forest protection, and who therefore have directed their recommendations along constructive lines.

Is Your BARN Up-to-Date

Let us know what you want and we will make plans to fit your requirements free of charge.

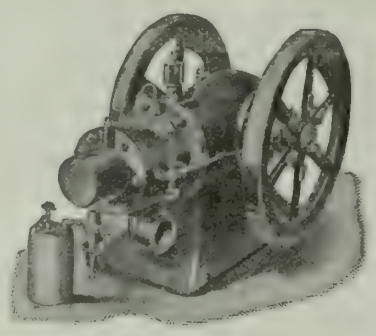
An up-to-date dairy barn with proper, sanitary care of your stock, means bigger profits.

When You Visit the CALIFORNIA STATE FAIR AT SACRAMENTO September 13th to 20 (inclusive)—See

LOUDEN'S Steel Stalls and Stanchions

In Actual Practical Use in the Sharpless Separator Exhibit Near the Model Dairy Barn and Butter Building

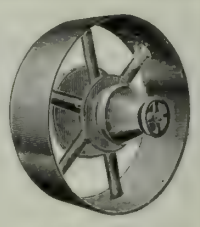
Western Equipment Co. 72 FREMONT ST. SAN FRANCISCO



The Simple Oil Engine 7-12-20 H. P.

This is the Engine that has solved the cheap fuel question

It makes no difference for what purpose the engine will be used, it will be all that is required at one-half cost and one-quarter for repairs over any other type. It is simple, reliable and efficient. Let us know what size you want.



The Havana Double Grip Friction Clutch Pulley. The most reliable clutch ever made. Every engine user should have one. It is reliable, safe and cheap.

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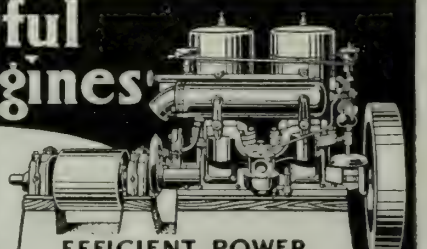
Big Powerful Irrigating Engines



Built especially for long, hard, continuous work. Absolutely dependable; they need no attention except fuel and oil. Automatic throttling governor. Every engine guaranteed. Also used on tractors and in machine shops and factories—light enough to be easily portable and yet can't be beat for reliability and power. Made in two and three cylinder sizes.

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It describes and illustrates this entire line of Gray Engines, and gives you the information you want. State exactly what your requirements are, and your letter will receive the attention of our Special Service Department.

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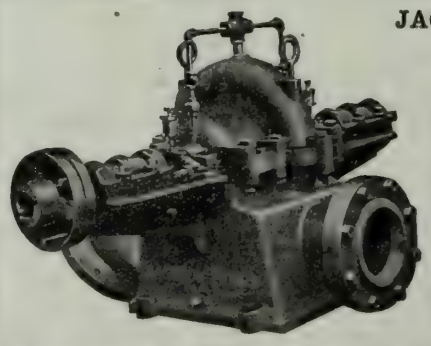

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WATER IS WEALTH

No place is this more true than on the farm. Irrigation economically and intelligently performed produces dollars where cents previously grew.

For economical, efficient and continuous work in the Irrigation System, on the Orchard and Farm the Jackson pumps have met the severest tests.

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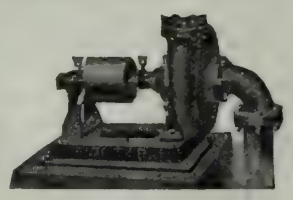

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Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

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REGISTERED DUROC JERSEY SWINE Some extra good young boars for sale, ready for service. Best Eastern strains. Ed E Johnson, Turlock, Cal.

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REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

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POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroghbred Berkshires.

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CHAS. GOODMAN, breeder of High-Class Berkshire Swine. Williams, Cal.

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RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. High class stock. First-class dairy breeding. Smooth cattle. Best pedigree. P. O. Box 321, Petaluma, Cal.

FOR SALE—Two pure-bred Jersey bulls (unregistered); one dark fawn, the other light fawn colored. Price $50 each. C. Booth, Alamo, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

CHAS. L. LEONARD, Jacinto, Glenn Co.—Registered Jersey service bulls, sired by Gerties Lad, Gerties Son, and Mellas Fox, for sale.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

MINOR & THORNTON, Breeders of Reg. Holstein-Friesian cattle. Kearney Park P. O., Cal.

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J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

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T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

With the Livestock Men.

E. E. Walters of Hemet, states that he will retire from the Percheron horse breeding business as he has other interests which require his time.

Stockmen in the vicinity of Angels Camp, Calaveras county, have had a hard season and most of the cattle in that vicinity look bad as a consequence.

Feeding conditions in northern Sonoma and Humboldt county have been good all summer and we understand more stock could have been fed if it could have been secured.

Frank Brush and S. Brittian of Santa Rosa, are now breeders of Berkshire hogs having recently purchased foundation stock for their herds from S. B. Wright of Santa Rosa.

The Geo. H. Croley Company, of San Francisco, shipped to Hilo by boat, a fine young boar during the week. The boar was from the stock and breeding of A. M. Henry, of Farmington.

The Charles Dame ranch in Capay valley, Yolo county, has been sold to Dr. D. F. Herspring, who will convert it into a horse breeding establishment and also raise some cattle and grain.

The plan to form a co-operative precooling and pasteurizing plant at Patterson by the dairymen was discussed at a meeting last week and favorably voted on. Means of raising money for it will be taken up at once.

Stanislaus county sent a strong representation of stock to the State Fair, last week, those shipping were The Rancho Dos Rios, G. O. Hillier, W. J. Hackett, J. T. Daggs, H. E. Cornwell, C. D. Hayworth and U. G. Strader.

A large Berkshire breeding establishment is to be started in the Pine Creek section, near Chico, by Frank E. Silvers and Charles F. Roller. There are 180 acres in the ranch, which will have one of the first pure-bred swine herds of Butte county.

Harold Bell Wright of Imperial county, has purchased the entire stock of the Tecolate Livestock Company, and the Percheron horses will be disposed of as soon as possible. As Mr. Wright has added literary and dramatic work to do he will not have time to devote to stock raising according to advices sent out.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouilletes, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

AIREDALE TERRIERS, the best all-around dog of the day. Puppies and grown stock. DROMORE KENNELS, Vallejo, Cal.

FOR SALE—85 highly graded young Shropshire ewes; two thoroughbred rams. Perkins & Co., Perkins, Cal.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

WAUKEEN STOCK FARM—Jersey cattle, Poland-China hogs. Young stock for sale. Chas. N. Odell, Prop., Modesto, Cal.

BRAE BROOK COLLIE KENNELS—Line bred tri-colors. Working prize stock. R. F. D. 69, Santa Rosa, Cal.

JERSEY CATTLE, DUROC JERSEY SWINE. Mossdale Farm. J. E. Thorp, Stockton, Cal.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-Horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

The Co-operative creamery at Ceres is now shipping over 1,600 pounds of butter daily from 175 patrons. When this creamery started in the early summer, its production was only about 700 pounds, which shows that co-operative methods soon catch on in Stanislaus county.

Frank Roberts & Son of Penn Grove, have been investing heavily in Short-Horns recently, and as a result now have a good sized herd. It is their intention to develop the herd along milk producing lines, believing that the dual purpose cow will be in good demand from now on.

J. E. Thorpe, of French Camp, reports having lost his bull, Sonny St. Hillier, and an aged cow during the past month, also one of his fine Duroc-Jersey sows. This makes three head of his Jersey cattle which have died during the past two months, and materially cuts down Mr. Thorpe's foundation herd.

Hog raisers may have to depend entirely upon California grown corn for fattening purposes on account of the poor crop in the East. The crop around Corning is turning out exceptionally well this year and reports indicate that a lot of good hog feed will be produced there this year.

Eaton and Hughes formerly of Ukiah, have rented 100 acres of land adjoining the Santa Rosa race track, and will hereafter use it for a jack and poultry breeding plant. They have at present two jacks and two jennets and expect to further increase this number by purchasing more stock in the East.

In the report of Dr. O. A. Longley, Livestock Inspector of Fresno county, it is stated that August has been very hard on stock, owing to the heat. There is a catarrhal fever of intestinal form very prevalent among horses at this time. Dr. Longley states that the course of the disease is usually slow, and care should be taken not to work the animals during the period of languor, weakness and loss of appetite.

An eastern report of the livestock market states that the market in the immediate future will depend on supply. If liquidation continues and dry weather coupled with high cost of corn, renders this probable, receipts of all classes will be generous. A continued heavy supply at Kansas City is in sight. California has gone through a poor stock season, but it is evident from such reports that others are having their troubles also.

The theft and sale of a number of cattle from the Huntley ranch near Goshen, Tulare county, resulted in the arrest of Elta and Carl Stokes, of said county, on the charge of grand larceny.

A large increase in cattle and swine receipts at the Portland Stock Yards last week resulted in a bad setback in prices for hogs, though beef prices held their own fairly well. Light hogs sold for $8.75 to $9; steers from $7.30 to $7.70, with $8.25 as top; lambs at about $4.75, and wethers and yearlings at $4.25.

An account from the Lompoc valley, Santa Barbara county, states that all crops are looking well, though usually somewhat shorter than last year. The season is finishing up excellently. The mustard crop, for which Lompoc was once noted, is falling off until, this year only 9000 to 10,000 bags will be marketed. Very profitable results have been secured by growing sweet pea seeds for leading seed companies, about 700 acres going to this crop. The yield in some cases has been from 600 to 800 pounds per acre.

REGISTERED POLAND-CHINAS
(Large Type.)

Royal, Orient, and Chief Price blood. 3-year-old herd boar, Young's Wonder, and fine young stock for sale.

FAIRVIEW STOCK FARM,
W. A. Young, Prop., Lodi, Cal.
Will show at the State Fair.

HEIFERS AND BULLS FROM A. R. O. REGISTERED HOLSTEINS.

Breeding superior in milk and fat productions.
Animals well grown and health guaranteed.
Visitors welcome.

LINWOOD FARM
Santa Cruz, Cal.

Duroc Jerseys

My herd won Duroc Jersey Association's Special Prize at 1912 State Fair. Will have some fine young stock, both sexes, at the Fair this year. Be sure to see them before buying.
ED. E. JOHNSON, Turlock, Cal.

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LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, always fresh and reliable, they are used by over 80 per cent of California and Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials.
10-dose pkge. Blackleg Pills.....$1.00
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Cutter's Blackleg Pill Injector.. 1.50
Pills may be used in any injector, but Cutter's is simplest and strongest.
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Insist on Cutter's. If druggist doesn't stock, order from Laboratory.

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Breeders and Importers
SHROPSHIRE SHEEP
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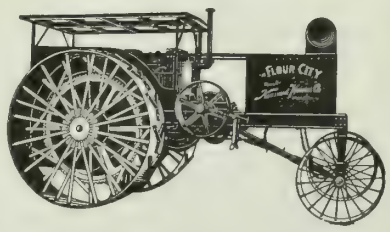

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Second Hand Pipe
By buying at the
ALEXANDER PIPE CO., Inc.
256 North Point St., San Francisco, Cal.

The Stable Fly and Its Control.

During the late summer of 1912, the actual death loss of livestock in northern Texas caused by the stable fly is conservatively estimated at $15,000 in Farmer's Bulletin 540, recently issued by the Department of Agriculture. The loss due to the reduction in milk supply may reasonably be placed at $10,000 and other losses far surpass these two items. This only includes a few counties in northern Texas where the fly was most abundant and not its devastations sustained in practically all parts of the United States. The Department's new bulletin is written by F. C. Bishopp, one of its entomological experts, and gives many practical hints regarding the control of this pest.

Besides literally worrying cattle, mules and horses to death and killing them by extracting their blood, the deadly fly also transmits disease from one animal to another. Investigators also consider it to be an agent in transmitting glanders, while a disease known as infectious anemia or swamp fever of horses is thought by some to be carried by this fly. A number of years ago it was found to act as a transmitter of a species of roundworm that infests cattle.

Animals weakened by loss of blood are more prone to contract other diseases. "Texas fever" in an acute form often attacks live stock that has become less energetic in fighting with stable flies. The joints of both horses and cattle sometimes become so swollen from standing in water where they sought protection from flies, that they can hardly walk.

Man Not Immune.—Even man may be inoculated with disease by this pest. Septicemia (blood-poisoning) is considered to be carried by it, and demonstrations of famous physicians have pointed to the possibility of the transmission of infantile paralysis in the same manner. Thus it will be seen that the transmission of a formidable array of diseases is chargeable to the stable fly.

The stable fly is one of the most widely distributed of insects, being common in both tropical and temperate regions where domestic animals are reared. In regions bordering on the tropics, the flies are of importance throughout the entire year. In the extreme southern part of our country there is no month during the year in which flies are not annoying to horses and cattle. In the northern States, the fly is particularly injurious and abundant in the late summer and fall.

Where the Flies Breed.—Investigations made during the 1912 outbreak showed clearly that the vast majority of stable flies bred in straw stacks. It was also shown that while the fly breeds in pure horse manure, it favors a mixture of this substance with straw.

The fly was found to be breeding in much greater abundance in oat straw than in wheat straw. Rice straw was also found to furnish suitable breeding conditions and there is little doubt that barley and rye also serve as food for the immature stages of the insect. The development of this insect is somewhat slower than that of the house fly and it is therefore quite necessary that the eggs be deposited in rather large quantities of material for it to breed out successfully.

How to Control This Pest.—As with most insects, the destruction of this one when it is actually doing the injury is what is most desired by those concerned. With this species, as with many others, this is the most difficult time to accomplish the desired result.

During the recent outbreak in Texas many different substances were tried with a view of repelling the flies from livestock. Although some materials gave a measure of protection for a time, none had a lasting effect. In addition to the temporary value of these substances, injury was sometimes produced by their application. Many malodorous mixtures, particularly of an oily nature, have some value, but in preparing these care should be taken that they are not made too strong particularly when animals are being worked in the hot sun. If they are made too strong they are likely to cause overheating of the animal and produce shedding of the hair.

A mixture of fish oil (1 gallon), oil of pine tar (2 ounces), oil of Pennyroyal (2 ounces), and kerosene (½ pint) was found to be very effective in keeping the flies off livestock when applied lightly, but thoroughly, to the portions of animals not covered with blankets or nets.

Care of Straw Stacks.—Since straw stacks have been found to be the principal breeding places of this insect in the grain belt, the proper care of the straw is by far the most important step in control. The straw should be stacked more carefully than is ordinarily done, by making sides of the stack nearly vertical and rounding it up well on top in order the better to shed the rain.

All straw not required for winter feed should be disposed of immediately by burning or by scattering it over the land soon after threshing and subsequently plowing it under or by burning the stacks. The plowing under of the straw is the most advisable method of procedure, as by this practice large amounts of humus are added to the soil.

All stacks not consumed by stock during the winter should be promptly disposed of in the early spring. This may be accomplished in the same way as has been suggested for the fall.

Manure Piles Dangerous.—Although straw is the principal breeding place for the stable fly in the grain belt, thousands of them develop in manure piles. The house fly and horn fly also breed extensively here, and therefore the greatest care should be used in dealing with this animal refuse.

Manure should be hauled out and scattered at regular intervals and any accumulations of straw or hay, especially adjacent to stables, should be disposed of. Stable manure being usually in close proimity to human habitations, the flies from it have freer access to man to disseminate human diseases.

SKIM MILK CALVES.

"Some dairymen still cling to the idea that calves cannot be successfully raised on skim milk," writes Fred Weir of Chehalis, Wash., and then continues: "I simply call attention to the fact that many, if not all our world's record cows have been raised on skim milk, with one possible exception. Every animal in a herd of 18 Jerseys has won the largest share of the blue ribbons at the leading fairs on the Pacific Coast, in 1909, including the A.-Y.-P. Exposition, were raised on skimmilk. By following a few simple rules, calves can be raised without difficulty. Feed the milk warm, feed it clean, and in buckets that are kept as clean as the milk buckets. Feed the calves a uniform amount, and at regular hours. Do not attempt to make up for the cream taken out by feeding enormous amounts of skim milk. The calf should have its own mother's milk for the first few days and whole milk until it is about two weeks old, when it can be gradually changed from whole to skim milk, but not abruptly changed. The young calf should be fed three times per day until a week or so old, and it would be better if the feeding three times could be continued longer. The amount of milk required for a calf varies somewhat with

CHOICE CHEAP CONCENTRATED

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CATTLE POULTRY SWINE

FOR PRICES SEE OR WRITE

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Will Exhibit at State Fair

"HILLCREST LAD"
First Prize Ram at State Fair, 1911

We invite you to inspect our exhibit of prize-winning stock at the State Fair, which will consist of SHORTHORN CATTLE, SHROPSHIRE and MERINO SHEEP and newly imported DORSET SHEEP.
Stock for sale at all times.

Hillcrest Stock Farm
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DAVIS, CALIFORNIA

A. C. RUBY, Portland, Ore. C. W. BOWERS, Sacramento.

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THE LARGEST HORSE IMPORTERS ON THE PACIFIC COAST

We sell more imported horses than all other firms on the Coast because we are direct importers and give a four-year guarantee which is good right at home. We have on hand at all times the largest and best lot of heavy draft stallions and mares, both American bred and imported, to be found any place in the West. If you are in the market for a high-class stallion or mare, don't fail to give us a call, as we can sell you more genuine horse for the money than any other importer in the business.

We have a large shipment of Percherons, Shires, Clydesdales, Belgians, and Hackneys now en route from Europe which will arrive at our establishment about September 10. This is an exceptionally fine lot of horses, and it will pay you to see them before purchasing elsewhere.

ADDRESS
RUBY & BOWERS, Davis, Cal.

We Have Imported More Horses Than Any Other Firm in the United States During the Last Year.

References: American Natl. Bank, Pendleton, Ore. Merchants Natl. Bank, Portland, Ore. First State Savings Bank, Marcellus, Mich. Bank of Yolo, Davis, Cal.

Use a MOTOR-DRIVEN PUMP

Electricity is clean, quick and reliable. There's no trouble or worry connected with it and it is always ready when you want it. The

American Centrifugal Pumps With Motor Base

are specially built for high speed work. They are all equipped with patent ball bearings.

A modern up-to-date pump using modern up-to-date power.

OUR ADVISORY SERVICE BUREAU Free to You

will give you advice as to the best pumping outfit For You.

What is your Irrigation Problem?

Write for Interesting Catalogue

The California Hydraulic Engineering & Supply Co.
68 Fremont Street, San Francisco

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

SHROPSHIRES

Pure Bred and Registered

For 1912:

140 Head Yearling Rams
150 Head Ram Lambs

Enterprise Stock Farm

H. P. EAKLE, Jr. Woodland, Cal

ALFALFA SEED

Best new crop—Native Grown—Prices right. Send us a list of your wants.

West Coast Seed House
116-118 E. 7th Street, Los Angeles, Cal.

the calf. From 12 to 14 pounds per day are sufficient for the first month. If the calf shows a tendency to scour on this, a smaller quantity should be fed. Overfeeding and irregular feeding are the chief causes of scours. The amount should be gradually increased after the first month, but not to exceed 20 or 24 lbs. at any time. It is extremely important that the young calf have grain and hay along with the skim milk. It will begin to nibble hay and grain at or three weeks. The feed consumed by a calf at this age amounts to nothing insofar as actual value is concerned, but is of material value to the young calf. Whole oats are the most satisfactory grain fed to the young calf. This is the testimony of many successful calf-raisers. Fat is the constituent taken out of the milk by skimming, and oats contain a higher percentage of fat than any other grain. There is no satisfactory theoretical explanation as to why whole oats are better than ground or rolled oats, but actual feeding tests have indicated them to be. In my work among the farmers of Lewis county, I find calves frequently confined in pens or stalls without access to either hay or grain and for this reason I wish to strongly emphasize the importance of having this feed before the young calves at all times. Older calves are generally fed, but the common mistake is in withholding the feeds too long, thinking that because the calf is young and eats but a small amount it is useless to feed it at all.

MORE GOOD SHEEP.

The following letter was received from T. S. Glide, of Dixon, during the week, and indicates that sheep breeders in California are purchasing only the best stock obtainable with which to build up the State's flocks:

"I am sold out on two-year-old Merinos, as I am shipping two cars of them to New Mexico next week and have about a car of yearlings left.

"I have just got up my bulls for this season's trade, and they are the best I ever raised, sired by Knight Perfection, Bafton Broadhooks, King Lancaster, and other sons of King Edward, but as I have not many they won't last long. I have a few that are yearlings now and the rest are eight and ten months old, but all of them old enough for service next year; also a few choice registered bulls.

"The sheep that I imported from England arrived in good order about a week ago and will have them at the Fair. Two of my Shropshire ewe lambs that I have just imported were the pick of the first pen of three of Lord Richard Cavendish, the others were the prize-winners of T. S. Minton and Mr. Knocks. The four yearling ewes brought out with mine for my brother were the pick of 100 head of Sir Richard Cooper as he was not showing this year. These sheep were all personally selected for me by Charles Priddy, who was my father's shepherd for sixteen years and who has made his home in England for the past fifteen years and whose son came over with them. Being personally known to all the breeders and a breeder himself, and having had my order for the pick of England's flocks since last January, you can rest assured that he got it, having learned the trade under the best judge of stock in the country, my father.

"The Dorset ram was first at the Royal a year ago as a lamb, and the ewes were third there this year in close competition. Am going to cross him on a few Merino and Shropshire ewes to see how they cross."

J. W. Wright, of Los Angeles, has purchased the F. P. Tatum ranch, of 300 acres, in Sonoma county, and will at once stock the ranch with cattle.

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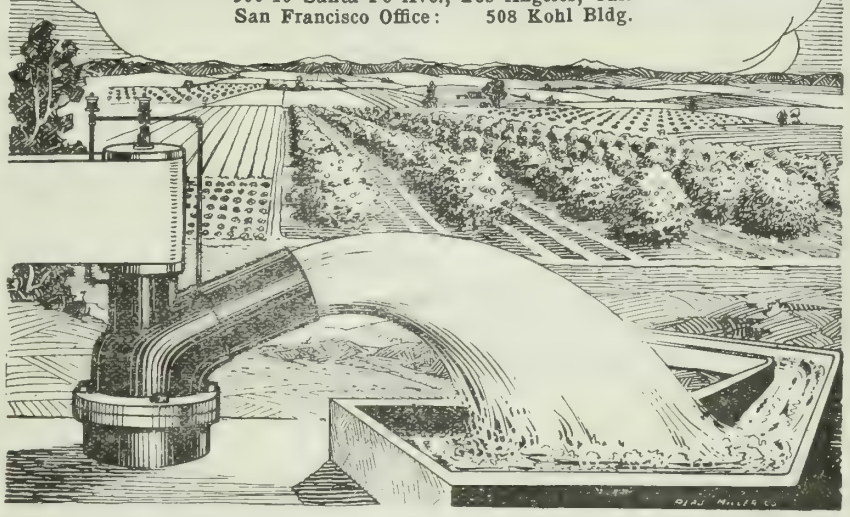

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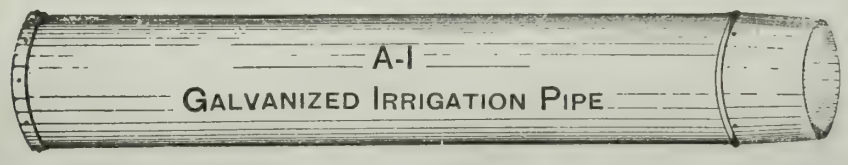

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THE TRUE PRINCIPLES OF GRAIN FARMING.

[Written for the PACIFIC RURAL PRESS by GEORGE WRIGHT.]

"I contend," says Professor Roberts, for many years the Director of the Cornell Experiment Station, "(1) that the soils should be cultivated and plant food set free to the uttermost limit; (2) that the leguminous and tap-rooted plants should be used as plant food gatherers; (3) that animals should be kept as much for the value of the manure they produce as for the profit realized from them otherwise; (4) that the least possible amount of stalk, vine and limb consistent with economy and health of plants, should be grown; and (5) after having practiced all the economy possible, if there is still a lack of fertility, in order to secure the highest quality of product and the greatest net income, that a commercial fertilizer of high grade should be applied with a liberal hand. I believe that farm manure which has laid in the open yard or has been heated, and which has to be taken long distances, is far more expensive than a high grade commercial fertilizer."

These words were written by Professor Roberts after long years of careful and painstaking experiments and scientific study in the use of both manures and fertilizers side by side, and coming, as they do from one of the foremost agricultural thinkers of the day, and one who is a constant advocate of high class cultivation are indeed significant.

It is the neglect of these fundamental facts which has brought the grain farmers face to face with the question as to whether they can afford to produce the crop under the present condition.

The particular feautre which has dominated grain production in California, and in the Pacific Coast States generally has been mass production, rather than maximum production per unit of area or quality of product. But with the inevitable ultimate deterioration of soil under such a practice, heightened by the encroachment of other crops, there has been a notable falling off in the product *in toto*, as well as in the yield per acre, during recent few years.

While grain farming on an extensive scale is not an industry to be particularly encouraged when natural conditions are such as to make more intensive crops safe, yet it is still, and is destined to be for all time, a very important industry in California; and as one of the staple crops of a general farm, it is worthy of not only much encouragement but also the greatest aid that can be given by scientific research. How to produce more grain of better quality, then, is a very pertinent problem, and Professor Roberts strikes at the foundation of the question.

At the outset Professor Roberts touches a most fundametal factor, namely a deeper and more thorough preparation of the land. Many experiments made by the California Experiment Station under the supervision of Professor G. W. Shaw show clearly the importance of this practice here in California. These experiments show that by a deep preparation of the land and the making of a firm seed-bed at an increased cost of possibly one-fourth over the common shallow preparation so long followed showed a gain of over $3 per acre for the first season, and $4 for the second season. This was the result of over 40 trials. Such deeper preparation applies to the plowing for summer fallow or in preparation of land for seeding previous to the middle of January. If land is to be seeded later than the time indicated, then a more shallow preparation should be given. If land has previously always been plowed shallow it is doubtless the safer practice to gradually deepen the plowing until a depth of eight inches has been reached rather than to attempt to force the change all at once. Certain it is, however, that this deeper practice will make for a decided gain of many dollars return to the grower who consistently follows it.

At this time the writer has not the space to discuss all the important points made by Professor Roberts, but wishes to consider briefly the last one touched upon by him. It is quite generally admitted that the diminishing returns obtained per acre are largely due to the fact that the available plant food in the upper layers of the soil has become much depleted, owing to the fact that little, if any, attempt has been made to return anything to the land. The harvesters made no manure, practically no stock was regularly kept by the growers who operated on a large scale, and where stock was kept little attention was paid to the manure and the ultimate result was that no restriction to the land was made. Under such conditions it is little wonder that returns should fall off. This has been but a repitition of history in every other country. Why should not the same thing happen here? It could not be otherwise.

Fifteen years ago the Australian wheat grower also saw his yields gradually diminishing. He had forced upon him that his soils were becoming exhausted of humus and plant food through continous cropping, and he proceeded to apply the remedy and learned to fallow and fertilize. The first has already been learned by the California grain grower, but not the second. The use of artificial fertilizers was first used in Australia in 1895, and has since increased very rapidly. The marvelous results achieved on lands where yields had been steadily diminishing for years caused the practice to spring into favor immediately, and the combined seed and manure drill which soon followed, contributed much to the rapid extension of manuring. In 1911, it is estimated by the most reliable authorities that not less than 75% of all the grain land was fertilized, and that the result was an increase of not less than four bushels per acre, having a money value of $3.20 per acre. From an expenditure of five million dollars for plant food the growers secured an increase of fifteen millions in less than twelve months.

It has been the experience that the highest returns have been obtained from a combination of phosphates and potash, and inasmuch as the soil conditions there are quite similar to those of California, these results are at least suggested for growers here in their attempt to overcome the same conditions of depleted soils. Even as small amounts as 56 lbs. of a mixture consisting of 42 lbs. of acid phosphate and 14 lbs. of sulphate of potash has proven surprisingly profitable in experiments carried out and continued for a number of years. Regrading the Pacific Coast conditions, however, there is little doubt but that heavier applications of the mixture, say 200 lbs. or more, would be required to accomplish equal results.

It cannot be denied that some change of system must be introduced if growers are to make more than the actual cost of grain production, and the methods above suggested are so simple that no one can object on the ground of materially increasing the cost.

The U. S. forest service is using gasoline railway speeders for fire protection purposes. They follow up trains on steep grades where sparks thrown out by forced draft are likely to start fires along the right of way.

Forest officers have found that in some localities heat vibrations in the atmosphere are so magnified by the glass of high-power telescopes that clearer vision can be had with the unaided eye.

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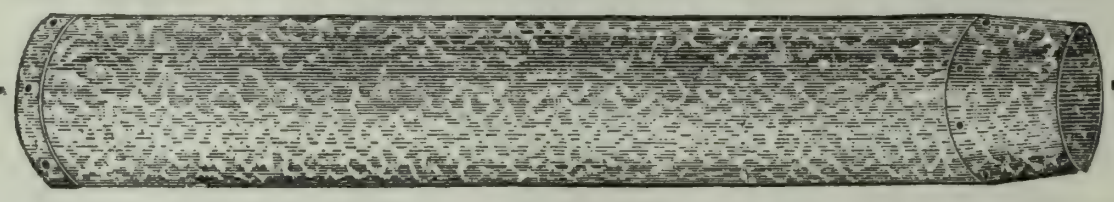

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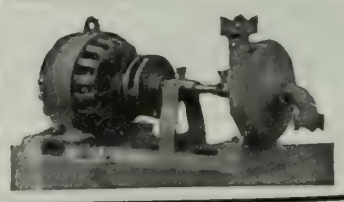

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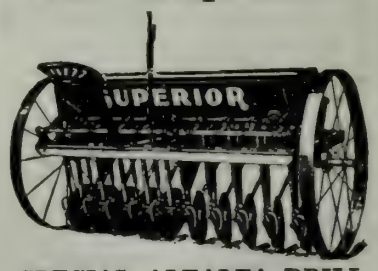

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The Breeding and Care of Rabbits.

[Written for the PACIFIC RURAL PRESS by MRS. SUSAN SWAYSGOOD.]

AGE OF MATING.—As with all other live stock, opinions vary as to the best age for mating, but all agree that well matured stock produce the strongest and healthiest young ones. The earliest age permissible for mating Belgians is six months, and they are better if left until ten. So you see there is quite a margin between, and I would take the ten months as a guide for all experience points to the folly of early breeding.

METHODS.—As we have no difficulty in procuring plenty of green feed at all seasons of the year it matters very little when rabbits are bred: the only important matter is that they be in health and good coat. Rabbits like chickens have a season for molting, and when in the molt it is not desirable to mate them. As to methods, this again is a matter of opinion. Some leave the male in the hutch, but a few minutes, while others leave him all night. Observation would be the best guide in this matter. It is desirable to have the does come in when there is no lack of green feed, as young does form a habit, or rather establish a tendency for giving an abundance of milk. This tendency once established a young doe will be likely to always have plenty of milk for her young. It is best to have several matings at one time, if possible, as this gives more opportunity to distribute the young more evenly than nature does. For instance some does will have a litter of ten or twelve, and of course that is too many for her to raise; then others will only have from four to five, so by having them come in at one time the young can be divided up. As each doe should have four litters a year it is easy to see the advantage to be gained by having the young come at regular times and all together.

PREPARING FOR THE YOUNG.—The gestation period of rabbits is about 30 days, sometimes there is a little variation, owing to age of does or condition, but not enough to cause any trouble. By keeping watch on the habits of the does you will be able to know just about when to expect the young. Before the time, the hutch should be thoroughly cleaned and disinfected, after which a good supply of soft oat straw, or hay should be placed in the hutch, so that the doe may arrange her own nest. If there is no nesting compartment in the hutch she should have a box placed in one corner. Make a hole, large enough for the doe to pass through, in a box 18 or 20 inches long about a foot deep and without a lid, turn the box upside down and give her the material, and she will make her own nest. When she makes her nest, extra attention should be paid to her food. She should have milk and warm water regularly and a pan of water should be kept constantly in the hutch. Take care that she is not frightened by cats or dogs, or even children, as does are very sensitive about this time. Avoid touching the nest or handling the young, after they arrive, unless it is absolutely necessary.

DIET WHILE NURSING.—Warm milk and bread should form the basis of food for the first week or two. These should be given morning and evening with green feed or roots during the day, boiled corn meal mush is also good for a change, but the dishes that these mashes are fed in must be kept scrupulously clean or diarrhoea may set in. The young begin to leave the nest when about three weeks old. At this time another thorough cleaning and disinfecting of the hutch and nest should be attended to.

WEANING.—The young may be weaned when a month old, but will do much better if left at least until six or eight weeks old. When weaning take away two each day until all are transferred to another hutch; this method allows the doe to dry her milk by degrees and is also more humane. If several does have come in together, the females may be put in one hutch, where they may be kept as long as there is room for them, or until sold, and the males can be put in another, but unless castrated they will fight very young. At four months the young should be ready for market, and if it has been well fed and not had any backset should weigh six pounds or over. This weight is supposed to be the best, or at least it means more profit to get rid of them at this age and size than to feed longer, unless one is catering to a restaurant trade that requires larger animals. Some breeders prefer to sell at ten to twelve weeks and aim to have their stock weight about 5½ pounds at that age. To do this requires that the animals be kept in small hutches with practically no exercise, or very little, and that they be fed heavily from the time they are weaned. Under this treatment they may grow very rapidly, and the meat is very fine grained and of superior quality for the table.

But all these matters are for individual thought and can only be decided after a careful survey of market conditions. Every locality differs, some, from another and with rabbits as other food supplies it is first a question of finding out what the market calls for and then trying to fill the want.

KEEP THE BEST FOR BREEDERS.—There are always some specimens that will outgrow others and these are the ones to select as breeders, it is not always a matter of like producing, but when the capacity is there for strength and growth it rarely fails to produce itself in the young.

AILMENTS OF RABBITS.—In one respect rabbits are very much like poultry, they will stand more neglect in a cold climate than a warm one. If unsanitary conditions prevail in a cold climate, the weather kills a great number of germs, but in a warm climate like ours the winters are never severe enough to kill any germ, so once an unsanitary condition is started in a poultry plant or a rabbitry disease and death are the sure result. With rabbits there must always be kept some absorbent, such as sawdust or litter to take up the moisture, if allowed to soak into the woodwork foul smells arise that cause disease of the eyes, mange, scurvy and surfeit. Other troubles such as snuffles are the result of improper ventilation, sudden drafts of a cold air in overheated buildings and similar causes.

Diseases of the digestive organs come pretty much from improper feeding, such as feeding young rabbits too much wet juicy green feed, or from making a too radical change in the feed before the system has time to adjust itself to it. For diarrhoea, dry feed is the best remedy and exercise will prevent many of the troubles.

A person going into the business of rabbit breeding should get a good book on the subject. The business of rearing rabbits is so much more extensive in England than in the United States that nearly all our information comes from there. 'Practical Rabbit Keeping' by George A. Townsend, published by Cassel Company, New York, is full of information that the amateur needs.

Like the poultry business, the care and handling must be gained by experience, and it is the wisest and best policy to start in a small way and grow into the business by degrees. In this way one is out very little except the time and labor until enough experience has been gained to determine the merits or demerits of the business.

FEATHERS VERSUS FUR.—Very often it happens that a chicken fancier is also a rabbit or dog fancier, but I am just a plain chicken crank. Feathers are my hobby and when out in the yards I spot a particularly nice pullet whose coat of feathers shines like gold it makes me feel good all over. Most people idealize the finished product, whether it be a picture, a statue or even a book; but I idealize the process of obtaining or reaching the finished state, and so the pleasure is prolonged and the work enjoyed. It is not work that kills, but the spirit in which we do the work. To make a grind of what should be a pleasure is what tires the body; keep the mind in a state of anticipation of something good and you have the right method of working.

Next week we will come back to feathers and enjoy them all the more for this little diversion into the realm of furs.

A company has been formed to take over the 300-acre Wilbur ranch, near Marysville, also about 300 acres adjoining. Part of the land is already set out to grapes, and the rest of it is to be planted to vineyards, making it one of the largest in the State. The Wilbur place is noted for its Thompson Seedless grape vineyard and fine drying plant.

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The Home Circle.

Blueberries.

Debbie and I were standing on Sunset Rock watching a forest fire on the side of old Shaunagunk. Debbie was crying.

A great tree she had been very fond of had burst into a red blaze, changed to pink ashes, and dropped out of sight as we gazed.

"I cannot bear to see it," she said, hiding her face on my shoulder.

"No matter, Debbie," I said. "There'll be plenty of blueberries next summer. You know there always is the year after these fires, and I'm as famous for eating blueberry pie as you are for making it."

But Debbie would not laugh.

"There are always enough blueberries," she said. "But I loved that tree—the tree we sat under when—"

"When I asked you to be my wife," said I. "And you said yes, otherwise I should not have made that remark about the blueberry pies."

But I liked the tree, too, for all that. Debbie took things of that sort very hard. She could not bear to see the flowers fade in autumn, or the grass grow brown. She often said that she believed the green things growing had souls.

She had been just like that ever since she was a baby, when she petted everything on the place. The calves, the lambs, the little piglets, even the black hog in his sty came in for a share of her favor, though he was the most unlovable creature alive. And I remember that one Thanksgiving Day—the turkey that graced the feast had been her special favorite—she absented herself from the table, and was found, after a long search and much alarm, hiding in the garret.

"I can't touch him, mother," she confessed. "I can't. We have been too friendly."

"An odd child," the farmers' wives declared, and thanked Heaven their own had more plain common sense and less imagination. But even then, to my fancy, Debbie Doane was the sweetest, prettiest creature alive. A slender, blue-eyed, fair-haired wisp of a child, as light on her feet as any bird. She knew all the birds in the woods, it seemed to me, and where they nested, and I never dared touch one. I had a boy's natural brutality, of course, but for Debbie's sake I kept it under, until it died a natural death with manhood, for we lived in that place among the mountains—Debbie and I—until she was eighteen and I one and twenty.

Our parents were friends, and I was an only child, while Debbie's little brothers—there were two or three of them, I believe—had passed away when they were babies. Our liking for each other pleased our mothers, and when one day I began to know that I did not love Debbie as a sister, I was sure that no one would disapprove; and up there under the tree we had just seen drop, we kissed each other for the first time as lovers kiss, and said those things to each other which only lovers say.

And so I had come to thinking of her as my future wife, and talking about her making blueberry pie for me.

But long before the blueberries sprang up over the ashes of the dead pines every thing had changed.

Debbie's father was a hot-tempered man, and mine was an obstinate one. They got along wonderfully with each other for years, and it seemed to be one of those especial bits of spite which fate does to lovers, that they should have their first serious falling out directly after Debbie and I were engaged.

What was it about, you ask? Of all men on earth, farmers quarrel about the smallest things. The ill-feeling began about a bit of meadow land, worth next to nothing, was continued by our old pear tree, which projected its roots into Mr. Doane's cellar, and finished by one of Mr. Doane's cows, which tore down our corn; and one day the two elderly men faced each other, their faces crimson, their eyes blazing, blotting out the friendship for years, by their mutual taunts and reproaches, until at last Doane struck my father, and my father knocked him down. He fell with his head against a bit of wood, and cut it, and the blood flowed all over his face and neck. All the women screamed; Doane lay at length upon the grass a gory spectacle. Mrs. Doane called one farm hand to help his master in, another to run for a doctor, and the general impression that a murder had been committed was conveyed. It was the matter of a bit of court-plaster, after all; but a lifelong friendship was over; and it was conceded on both sides that Debbie and I must break up with each other.

Up on the mountain, where the blueberries were to be next summer, we met for the last time. The ashes of the tree we had first kissed under were all blown away, and only a grim black stump remained to tell where it once stood. Debbie was pale, but very firm.

"It would be an insult to father if I should marry the son of a man who tried to kill him," she said; "and Mr. Ashton did try, Eben."

"My father only resented a blow, as any man ought," I said.

"But how furiously," said Debbie; "how brutally."

And then we quarreled, until at last we parted, going by different ways down the mountain, angry with each other as we had never thought to be.

The quarrel between the two families changed everything. My father shortly found it too unpleasant to live in such an unfriendly fashion, and resolved to move out west. My mother felt as glad to go as he. As for me, to pass Debbie in the road without speaking had become unendurable. We left the place, and in the western town that grew like a mushroom on the spot that was little more than a wilderness when we settled there, I made my fortune in a business which was the outgrowth of my surroundings. With the best luck it takes some time to make a fortune, and by the time I was really rich I had come to forty years, and passed it.

My parents were both dead, and I had not married. I had tried to fall in love, but could not; and, if you will not think me a puppy, I will tell you that, being a pecuniary "catch," I was rather persecuted. Anxious parents with fine families of grown daughters flung them at my head, and the girls themselves were not behindhand. If I could have believed that my personal qualities made me appear in the light of a prize, I should have felt flattered and might have succumbed, but I knew my money was the bait which all those pretty fish were anxious to nibble, and I resolved to leave the place for a while. The wealth that seemed so great from a local point of view was not an unusual amount of money in New York, where millionaires had grown common, and I found the

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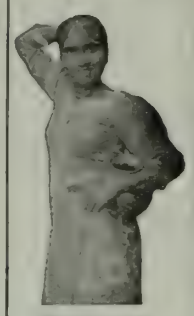

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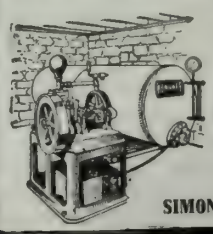

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great metropolis pleasant, and made friends there. Among them I soon numbered an old bachelor of literary tastes, who told me that he had taken a fancy to me. He proved it by being very confidential. "You are twenty years younger than I," he said, "but still you are of an age when men are usually married. Perhaps you can comprehend how you might go on for twenty years more, and never find a woman who seemed exactly what you wanted?"

"Perfectly," said I.

"Now, I've had women set their caps for me," said he. "Handsome women, too. Perhaps you don't believe it?"

"Indeed, I do," said I, out of my own experience.

"Ah, you've been there; you've been there," said Mr. Groton. "Well, I could not respond. My fault; not theirs. But lately I've met a woman who actually does move me, but I have my doubts. I'm afraid I shan't be happy. She's a blue stocking."

"Ah!" said I, not knowing what else to remark."

"I'm afraid of blue-stockings," said Mr. Groton. "They are usually bad housekeepers, I am told, and they don't look up to one. I wish to be looked up to. But I have great faith in you. She's to be at Mrs. Parker's on Wednesday evening. I'll ask to bring you. And you could do what I can't—put leading questions; discover what her domestic qualities are—she suspects me; I—I daren't—and give me your opinion. There is a widow, very handsome—Mrs. Cromlick—that may be more suitable. But there's a charm about my blue-stocking. She doesn't write very masculine books; they are about birds and squirrels, and bees and flowers—children's books. But still you'll oblige a friend. If you approve, I'll see her home and offer myself on the way; if not, I'll ask to be the widow's escort and propose to her. I can't waste any time at my age, and I want to settle down. Cross-question her, pray."

I promised and on Wednesday evening entered Mrs. Parker's parlors.

"There she sits at the table whispered the bachelor. "Pretty shoulders, eh?"

I nodded, for Mrs. Parker advanced and there was no time for words. I was introduced.

"I want him to know your literary friend. As a stranger he ought to know our shining lights," said Mr. Groton, with great cunning.

"Delighted!" said Mrs. Parker. "Mr. Ashton, this way please. Miss Doane, Mr. Ashton desires an introduction. Of course you have read all Miss Deborah Doane's works. What my children would do without them I cannot say. They are an education by themselves.

"Debbie turned authoress!" I thought. It could not be. Yet Miss Deborah Doane! Was it a coincidence?

It was not, for the lady turned as her hostess spoke to Debbie—Debbie still more elegant if not quite so pretty.

She knew me at a glance, and as I held her hand all my old love awoke fresh in my heart. And there stood Mr. Groton listening, and Mrs. Parker and children, and what could I say to her? I did not remark, "I have had that pleasure," nor did she. We sat and talked to each other before an audience until supper-time. Then old Groton whispered to me, "Take her down." And I did. And still my audience was large and attentive.

I had discovered that she, like myself, was alone in the world. I saw that she was ready to meet me halfway. Yet the hour of parting approached, and if old Groton took her home, proposed to her and was accepted, all was over. And yet, while strangers listened to my words, what could I utter to show her my intentions? This is what I did say:

"As you write about such things, Miss Doane, did you ever take notice of the fact that the year after a forest fire blueberries are very plenty on the Shaunagunk mountains."

"Oh, yes," she replied. "I go to the Shaunagunk every summer, and I made that discovery long ago."

"And you have not only made discoveries, but pies?" I remarked.

"Many," she answered.

"Oh! do you make pies? I thought authoresses never could cook," cried one of our audience.

"A lady once promised to make blueberry pies for me," said I. "It was while a forest fire was burning; but she never kept her promise. If you go to Shaunagunk next summer, I shall call at your camp, and ask you to make a pie for me."

"I do not camp out, but you will find me at a little farmhouse near-by," said Debbie, "and I will make all the pies you want."

"It is a solemn promise," I said.

She gave me her hand.

"I think the blueberries will be thick on Shaunagunk next summer, for the fires were fierce this autumn," she said. "Good night."

But I knew she would not accept old Groton if he proposed; and, besides, I took pains to whisper to him, in the dressing-room:

"The widow is the woman for you."

He married her, but Debbie is making a blueberry pie for me at this moment, and the berries were picked on old Shaunagunk.—Selected.

Forewarned Is 4-Armed.

A Boston physician relates that his active 9-year-old boy was kept after school, and the teacher had a serious talk with him. Finally, she said: "I certainly shall have to ask your father to come and see me."

"Don't you do it," said the boy.

The teacher thought she had made an impression. "Yes," she repeated, "I must send for your father."

"You better not," said the boy.

"Why not?" inquired the teacher.

"'Cause he charges $4 a visit."

Would Reciprocate.

Robbie was in the habit of running errands for an old gentleman next door who never paid him except in effusive thanks. He had just returned from the third errand one morning, and the old gentleman, patting him on the head, said:

"Robbie, I am very much obliged to you. You're a fine little fellow. Thank you, my boy, thank you."

Robbie looked up in his face wistfully, and apologetically replied:

"Mr. Jones, you don't know how I wish I could thank you for something."—Exchange.

Misconstrued.

An American motoring through a small Scotch town was pulled up for excessive speed.

"Didn't you see that notice. 'Dead Slow?'" inquired the policeman.

"'Course I did," replied the Yankee, "but I thought it referred to your durned little town!"—London Evening Standard.

At the courts a case concerning motor-driving was being heard, when the chauffeur declared that when driving at forty miles an hour he could, if necessary, pull up in ten or twelve feet.

"H'm!" said the judge.

Then the next witness—an expert—gave his evidence.

Said his lordship: "If a motor-car were traveling at forty miles an hour, and the brakes could be put on in such a manner as to stop it within ten or twelve feet, where would the driver go?"

"Depends very much on the sort of life he'd been living," said the expert.

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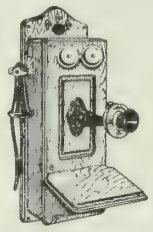

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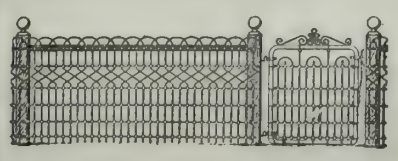

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THE MARKETS.

San Francisco, Sept. 17, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Some wheat is coming in from the North, but most of it is on orders for the mills, and offerings on the market are light. Trading also is limited, but the market is quite firm as to values.

California Club, ctl	$1.52½@1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½@1.55
Northern Bluestem	1.67½@1.70
Northern Red	1.55 @1.65

BARLEY.

Arrivals have been rather light for the past few days, and the spot market is not especially active, though there is a fair demand for feed. There is very little business so far in shipping or brewing grain, but there is considerable trading in December grain. Values are firmly held as before.

Brewing and Shipping	$1.40 @1.45
Choice Feed, per ctl	1.35 @1.40
Common Feed	1.30 @1.35

OATS.

Seed oats are beginning to move in considerably larger quantities, though prices are held rather high. Red and black seed are quoted for the first time in some months.

Red Feed	$1.65 @1.85
Seed	Nominal
Gray	Nominal
White	1.55 @1.60
Black Seed	2.75 @3.25

CORN.

There is nothing new in the local market, offerings being light and prices largely nominal. The shortage in primary markets, however, keeps prices firm at the recent high level.

California Yellow	Nominal
Eastern Yellow	$1.95 @2.00
Eastern White	Nominal

RYE.

Some small lots are offered at about the quoted range, but there is hardly enough at present to establish definite values.

Rye, per ctl	$1.45 @1.50

BEANS.

Some fairly large shipments of large whites are beginning to come in, and a few bayos have appeared, though the arrivals will probably increase considerably in the next week. A good-sized lot of Manchurian beans arrived recently. The bayos are bringing a little better prices than have prevailed of late, and blackeyes also show a slight advance, but large whites are lower, with abundant supplies expected. Small whites are unchanged. Limas are quoted lower in the local market, with only a moderate demand, and pinks are decidedly easy, with quite a large amount held over from the old crop. The demand from other markets is fair, but by no means active.

Bayos, per ctl	$3.25 @3.40
Blackeyes	3.35 @3.50
Cranberry Beans	4.00 @4.25
Horse Beans	1.75 @1.90
Small Whites	5.00 @5.25
Large Whites	3.25 @3.40
Limas	4.75 @4.85
Pea	Nominal
Pink	2.75 @2.85
Red Kidneys	3.25 @3.40
Mexican Red	3.40 @3.65

SEEDS.

Business locally has been extremely dull this week, and no great activity is expected for several weeks. Values are quite steadily maintained at the former level.

Alfalfa	12½@14 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	7 @ 7½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

With lower freight rates, an increased shipping movement is expected from Northern mills to the Orient. There is little feature to the local market, values standing about as before.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.65 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Receipts show a still further reduction, and a considerable part of the arrivals consist of alfalfa from the river districts, which is coming forward on old contracts. Supplies of grain hay, however, are ample for all local requirements, as both dealers and large consumers have a heavy tonnage in storage here. Fancy grades are scarce, and sales are reported up to $21, but there is hardly any of such stock to be had in the country. It is reported that there are still some small lots of hay in the fields, which are expected to take care of any special demand that may arise before the rainy season, and no advance in prices is expected before that time. Offerings of alfalfa are large, but the demand is rather limited, and it looks as if a large amount of it would be held in the country for the winter trade.

No. 1 Wheat, or Wheat and Oat	$15.50@16.50
do No. 2	14.00@15.50
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 95c

FEEDSTUFFS.

Bran is quoted a little lower, but otherwise the market is firm at the old quotations.

Alfalfa Meal, per ton	$18.50@19.50
Bran, per ton	25.00@26.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	29.50@30.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Rolled Oats	34.00@35.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

A little better shipping demand for onions is noted in the river district, resulting in a slight advance here, though supplies are ample. Receipts of green corn have fallen off greatly of late, and while there is not much demand, the price has been sharply advanced. The trade stocked up with tomatoes early in the week, and most arrivals brought fair prices, but it is expected that the market will be burdened with poor stock for the next few days. Otherwise, business shows little activity, and values are inclined to easiness. Lima beans are decidedly cheap, and string beans considerably lower, with no attractive stock offered. Peas also are off a little; squash, peppers, and sprouts are lower, though cucumbers show a little more firmness.

Onions: New Yellow, River, ctl.	90c@$1.05
Garlic, per lb	6@ 8c
Cucumbers, per box	40@ 65c
Green Peppers, box	25@ 50c
Carrots, per sack	75c
Cauliflower, per doz	50@ 60c
Green Peas, lb	4@ 5c
String Beans, lb	3@ 4c
Summer Squash, lug box	40@ 60c
Green Corn, choice, sack	2.00@ 3.00
Okra, box	40@ 50c
Tomatoes, box	30@ 65c
Eggplant, box	40@ 50c
Lima Beans, lb	2c
Sprouts, lb.	3@ 4c

POTATOES.

There is a fair shipping demand, and ordinary stock is quoted a little firmer, though there is no material change in the situation. Some choice stock from Salinas is bringing up to $2. Sweet potatoes are plentiful and easy, with some off lots selling below quotations.

New River Whites	85@ 90c
Sweet Potatoes, per ctl	$ 1.50@ 1.80

Dairy Produce.

POULTRY.

Eastern chickens are coming forward in larger quantities than last week, and as they consist largely of young stock the prices for such lines are lower. Large hens, also, are somewhat easier, though in good demand. Local stock is coming in about as before.

Large Broilers, per lb	24 @25 c
Small Broilers, per lb	24 @25 c
Fryers, per lb	23 @24 c
Hens, extra, per lb	18 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	24 @25 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.75@ 2.25
Ducks, doz.	4.50@ 6.00
Turkeys, live, per lb	22 @25 c

BUTTER.

After the sharp advance of last week, the market has slumped badly and is back to about the level of two weeks ago, with extras barely steady and the lower grades weak. The trade is buying very little on account of the hot weather, although there may be some revival in the next few days.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	38½	38½	38	36	36	34
Prime Firsts	32	32	32	32	32	31
Firsts	29	29	31	31	31	30

EGGS.

Trading in eggs is very light, as the trade is not anxious to stock up during the hot weather, and the heat has had a bad effect on the quality of offerings. This has brought some weakening from the high figures of last week, and extras are lower than for over a fortnight past.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	42	42	40½	40½	38	36
Selected Pullets	35	34½	34	34	32	32

CHEESE.

The demand for most lines of cheese has been very light this week, causing the loss of ½c on both flats and Y. A.'s. Monterey cheese, however, is fairly steady at an advance.

Fancy California Flats, per lb	16½c
New Yorung Americas, fancy	16½c
Monterey or Jack Cheese	16 @17 c

Deciduous Fruit.

Berries continue cheap and plentiful, with raspberries and huckleberries lower and blackberries at a wider range. Offerings of Coos Bay cranberries are hardly worth considering as yet. Cape Cod stock is expected and is offered at $8.50 per barrel. The first large lots of Newtown Pippins from Watsonville arrived lately, and are selling off fairly well at $1.25 to $1.50, while Gravensteins are higher with supplies decreasing. Bellefleurs are higher. The apple market is decidedly firm, as reports from Watsonville indicate the probability of heavy damage from heat. Peaches are considerably lower, as most offerings are in poor condition and have to be moved quickly. Figs also are lower, while plums bring a little better prices. The melon market has been greatly stimulated by the hot weather, and all offerings of watermelons have been cleaned out quickly at higher prices. Cantaloupes are rather plentiful, and some nutmegs are offered at 25 to 50c per box, but large melons do a little better. Grapes are easy, with several varieties lower, though first-class Tokays and Muscats still bring good prices.

Strawberries (chest):	
Banner	$ 3.00@ 4.00
Other kinds	2.25@ 3.50
Blackberries, chest	1.50@ 4.00
Raspberries, chest	5.00@ 7.00
Huckleberries, lb.	5@ 7c
Cranberries, Coos Bay, box	Nominal
Apples:	
Gravensteins, box	1.50@ 2.00
Greenings	75c@ 1.00
Bellefleur	1.00@ 1.50
Newtown Pippins	1.25@ 1.50
Common	50@ 75c
Crabapples, large box	65c@ 1.25
Pears, wrapped, box	1.00@ 1.25
Lugs	75c@ 1.00
Peaches, box	50@ 65c
Lugs	70@ 75c
Plums, crate	50@ 85c
Figs, double layer, drawer	40@ 65c
Cantaloupes, River, lugs	50c@ 1.00
Watermelons, per dozen	2.00@ 2.25
Grapes: Seedless, lugs	75c@ 1.00
Malaga, crate	50@ 65c
Muscat	70@ 85c
Black, lugs	60@ 75c
Tokay, lugs	90c@ 1.00
Cornichon	75@ 90c

Dried Fruits.

The dried fruit market has settled down into a rather quiet condition, as most buyers in outside markets appear to have taken care of their early requirements, and are in no hurry to make further purchases. Packers do not desire to carry any large tonnage in stock, and accordingly are buying only on a small scale, much of the fruit being held at higher figures than they are now willing to meet. There is nothing new in country prices, the situation being apparently firm all around, as the comparatively light buying movement has already taken a large proportion of the crop. Outside buyers have been taking very little interest in peaches, but a marked renewal of activity is reported in the East, which, if it continues, should bring a good buying movement in the country. Apparently there is nothing to be gained by shading prices, which would be likely to retard rather than stimulate the movement. A few growers are holding prunes for a further advance, and in view of the shortage, the outlook for values is promising, though there is little buying at the moment. The raisin situation is especially strong, with all indications of a very light output, and the Associated Company has lately put out two new price lists, showing further advances, refusing to confirm any more straight cars of Thompsons. The New York Journal of Commerce says:

"All reports from the Coast report a strong situation in California prunes at the advance to a 6c basis on 40s to 60s, inclusive, and 5½c basis on 60s to 90s, inclusive, f.o.b. Coast on October shipment contracts. It is said that no important buying has been done for New York account at the advance, but a good many orders at a shade less than packers' prices have been put up to Coast operators, and up to the close they have not been confirmed. Advices indicate that the bulk of the expected crop is now sold. It is estimated that the production will not exceed 90,000,000 pounds.

"A marked increase in the demand for peaches is reported, f.o.b. prices in 50-lb. boxes being based on 5¼c for standards, with a ¼c rise on other grades up to extra fancy Muirs and yellows. There is a steady call for spot offerings.

"Seeded raisins are still offered by outside packers at a cut of ⅛ to ¼c below the Association prices. No large business has been done for October shipments. Seedless and Sultanas are held in the range quoted below on new crop for shipments from the Coast.

"Apricots are firm but dull. Prices at the Coast are said to be too high to encourage buying in this market."

Evap. Apples, 1912 crop, lb	5 @ 6 c
do 1913	6 @ 6½c
Apricots, 1913	10 @15 c
Figs: White, 1913	3 @ 4 c
Black, 1913	2½@ 3 c
Calimyrna, 1913	4½c
Prunes, 4-size basis, 1912	4½@ 5 c
do 1913	5 @ 5¼c
Peaches, 1912	4½@ 5 c
do 1913	4¾@ 5 c
Pears, 1913	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels, 1912	3½c
do 1913	3¾c
Thompson's Seedless, 1912	4¼c
do 1913	4 @ 4¼c
Seedless Sultanas, 1912	3½c
do 1913	3½c

Citrus Fruits.

Values on all lines are firmly held, and while oranges find only a moderate demand, all other lines have been moving freely, the hot weather causing an extra call for lemons and limes.

Oranges (per box):	
Valencias	$ 4.00@ 6.00
Grapefruit, seedless	5.50@ 6.00
Lemons	4.50@ 8.00
Limes	10.00@12.50

Nuts, Honey, Hops, Etc.

NUTS.

There has been a strong demand for new almonds at the opening prices, owing to the general shortage. Walnuts are entirely nominal, old stock being entirely cleaned up, while no figures have yet been made on the new crop.

Almonds, new crop—	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts	Nominal

HONEY.

There is a fairly active demand in this market, and supplies are pretty well cleaned up, as there is not much coming in. Prices are firmly held at the former level.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Light	30 @32 c
Dark	28 @30 c

HOPS.

Baling is about complete in the Sacramento district, and the harvest is proceeding well in Sonoma county, but there is still some uncertainty as to the output in this State. Trading, however, has

been fairly active for the past week, with values about as before.

1913 .....20 @22 c

Live Stock.

Light and medium calves are quoted higher, and hogs have been marked up again to the figures of a fortnight ago, the supply being still comparatively light. Dressed beef, also, is higher.

Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7¼@ 7½c
Medium	6½@ 7 c
Heavy	5 @ 6 c
Hogs: Grain-fed, heavy	8¼@ 8½c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4 @ 4¼c
Ewes	3¼@ 3½c
Lambs: Suckling	5¼@ 5¾c

DRESSED MEATS.

Steers	12¼@12¾c
Heifers	11½@12 c
Veal, large	10 @11 c
Small	12½@13½c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

There is a little more stir in the wool market, and with the settlement of the tariff a better movement is expected. The spring clip is pretty well cleaned up, and some buying is being done on the fall clip, prices for which have been made as follows:

Fall clip:	
Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

Heavy Steers, over 56 lbs.	14½c
Medium	13½c
Light Steers, under 48 lbs.	12½@13½c
Heavy Cows, over 50 lbs.	12½@13½c
Light Cows, 30 to 50 lbs.	14 c
Kip	14½@16 c
Veal	17½@19 c
Calf	17½@19 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

The hide market remains steady at the same level as for some time past, and while there has been no unusually heavy buying movement, offerings are kept fairly well cleaned up. The continued firmness is attributed to light production, both here and in other countries.

HORSES ETAOIN SHRDI

Some readjustment of prices is expected shortly, as this week the first considerable offering of desirable outside stock in a long time is being placed on the local market. The offering includes a large lot of draft horses of the most desirable classes, as well as a number of all-purpose horses of lighter weight, and buyers are taking more interest than for several months. The

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	175@215
Wagon Horses, 1250 to 1350	135@175
Delivery Horses, 1050 to 1250	100@120
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

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PUBLISHER'S DEPARTMENT.

Merging two subscription lists is some job when the aggregate covers more than 18,000 names. All hands in the office are doing the best that they can and every effort is being made to avoid mistakes. However, mistakes will happen, and we want to ask every reader to report to this office as soon as possible if the RURAL PRESS is not delivered, or if it should happen that two copies are being received. In a couple of weeks we will have the mailing department running smoothly and trust our readers will bear with us if any mistakes are made.

Readers of the RURAL PRESS in the Santa Clara, lower San Joaquin, and the Livermore valleys, as well as those from San Francisco, Oakland, Berkeley, etc., should make it a point to attend the second annual Alameda County Fair, to be held at Pleasanton, September 24 to 28, inclusive. The wideawake citizens of the Livermore valley have made every preparation for a big time at Pleasanton next week and they should have a large attendance from the districts contiguous to them.

Thursday, Friday and Saturday will be big days for the nurserymen at Fresno. A good program is being prepared, and every man interested along these lines should by all means attend. Write H. W. Kruckeberg, secretary, 237 Franklin street, Los Angeles, for program and further information.

MR. COATES DISFAVORS HEAVY PRUNING.

To the Editor: I am sure that all who are in any way interested in the subject will appreciate the space you are giving to a discussion of the subject of "Pruning the Prune," and personally I feel gratified that discussion has been evoked: it at least shows that your contributors are not satisfied with results and that something is wrong.

I will ask the privilege of making one correction. Your correspondent alludes to the "heavy pruning" of prune trees as not advisable. Nowhere have I advised heavy pruning, but just the reverse; nor do any European horticulturists follow or admit of such a practice. I have seen whole orchards in Europe, up to 300 acres in extent, every tree being pruned with the knife; even hand pruning shears were not allowed, the owner contending it ruptured the bark. The practice I outlined calls for light pruning only, all of which may be done with ordinary pruning shears. (I do not even include the barbarous two-handed shears as a tool fit to be used on any tree).

The main points are:

1. Opening of center of tree.
2. Sufficient shortening of wood growth to enable the branches to maintain weight of leaves and fruit without recourse to props, and without bending over.
3. Annual (absolutely) shortening in of all laterals or fruit spurs.

This proposition allows of ample modification in detail.

LEONARD COATES.

Morganhill.

LOAN PLANS ABROAD.

To the Editor: In perusing the columns of your valuable paper one cannot help but notice various articles on agricultural and general co-operation which are intensely interesting.

It appears rather strange to me, whereas co-operation is now in the air, not only in this country, but in Europe also, that the mutual co-operative plan that has been in such successful operation in England for over half a century is not yet established in this country. I refer to the plan of mutual co-operation to secure cheap money which has been in general use in the Southern and Eastern States for a great number of years. It has spread all over Canada, and yet in California we find the farmers are paying an average rate of 7% interest. It seems rather peculiar that the hard-headed farmer will persist in paying his savings into his local bank, thereby securing 4% interest; yet when he borrows, it is a different story.

The Canadian contract plan, whereby a number of individuals grouped together will pay in so much monthly, loaning the money in rotation at a low rate of interest, should prevail in this State. Is it consistent for the farmer to apply co-operation in one direction and pay out his savings in another? The farmer will slave and even pinch himself, selling the best he produces and retaining only the worst for himself. He does this to save enough to pay the monthly interest on his mortgage. The banker reloans the interest. Why cannot the farmer be his own banker? If this plan can be successful, and it can be proven that it has been, for over half a century, why does the Western farmer pay such a high rate of interest?

F. D. PHILIPS.

Oakland.

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Iron Sulphate Spray for Weed Eradication.

When properly prepared and applied, iron sulphate spray not only destroys weeds of most kinds, but leaves grains or grasses among which it is growing practically uninjured. While very effective in preventing threatened damage to crops from vigorously growing weeds, it cannot be made to take the place of rotations, cultivations, summer fallow, and other weed preventive measures. Neither should its use be attempted on weeds growing in clovers or other broad-leaved crops, as it will destroy them as well as weeds. Following is the method of use, as presented in detail by Professor H. D. Scudder, agronomist of the Oregon Agricultural College:

"The iron sulphate used as a spray has been thoroughly tested both by experiment stations and the manufacturers of the sulphate. When properly prepared and applied, it has proved destructive to dandelion, yarrow, sorrel, mustard, lamb's quarters, peppergrass, bull thistle, wild carrot, pigweed, shepherd's purse, and wild daisy. It will not destroy dock, which can be eradicated only by digging the plant out or cultivating it to prevent its going to seed. When used to destroy dandelions on lawns, it will injure the white clover. And it should be remembered that this spray cannot safely be used on weeds growing in any broad-leaved crop as it will destroy the crop as well as the weeds.

"The value of this spray as a destroyer of weeds lies largely in the fact that it can be applied and the weeds killed while they are growing in the grain crop. The spray will not destroy grains or grasses because of its limited area of action on their narrow linear leaves, while it will destroy the weeds named, largely because of its wider area of action on their broad and succulent leaves.

"As iron sulphate is a powerful salt, its action is similar to that of an alkali in the soil, causing the leaves upon which it falls to dry up, turn brown and die.

"The effectiveness of the spray depends mainly on four things: First, it should be applied during dry sunny weather, for if rain washes off the salt within two or three days it is not effective. Second, it must be applied with a sprayer which will deliver the spray forcibly into a very fine mist, so that the weeds will be covered as completely as possible. Third, the spraying should be done on a quiet day. Fourth, the spray should be applied to all weeds just before they bloom.

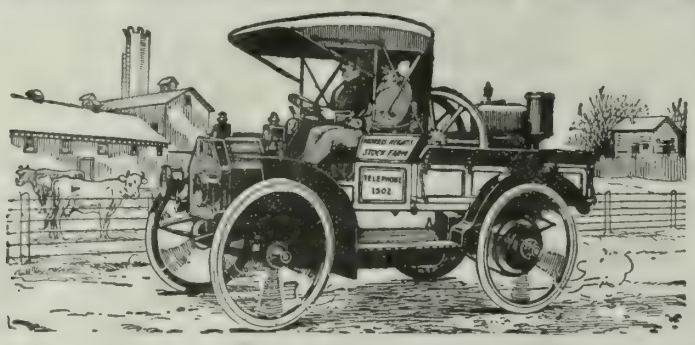
"The spray is prepared by dissolving 100 pounds of iron sulphate in 52 gallons of water. It should be made up fresh each day in wooden barrels, and the sprayer should be wood, rubber, or brass. The solution will stain clothes, and the hands should be protected by being greased with vaseline.

"Ordinarily for mustard in wheat fields one spraying is sufficient. On more persistent plants, such as the dandelion, the spraying must be repeated when the plant comes up again. Flax or wheat may be sprayed without injury to the crop when from six to twelve inches in height. Later the mustard or other weeds are likely to be too difficult to reach with the spray owing to the shading of the grain."

AGRICULTURAL LIBRARY AT BERKELEY.

Mrs. D. L. Bunnell, Librarian of the University Experiment Station, at Berkeley, writes us that this department of the University is endeavoring to build up an Agricultural Library worthy of its name, and find its files very incomplete. An appeal is therefore made for donations of United States publications of an agricultural nature: House documents in which Consular Reports and special Agricultural Reports are bound; the Proceedings of Horticulture, Agriculture, Forestry, and other agricultural societies of our California and other States; also bulletins and reports of Agricultural Colleges of other States. Expense of boxing, express, or freight will be paid by the Experimental Station. Of course, the institution will also be glad to receive donations of agricultural books which donors may desire to add to the collection in the Agricultural Library.

Switzerland has four co-operative associations for marketing forest products.



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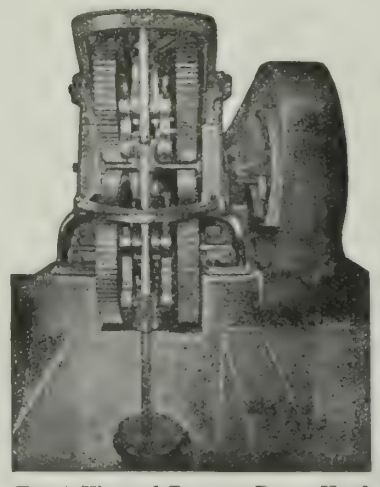

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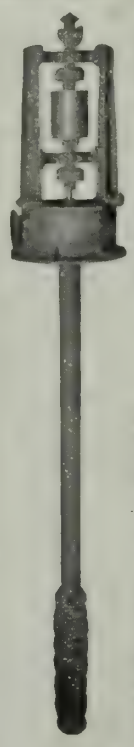

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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 13. SAN FRANCISCO, SATURDAY, SEPTEMBER 27, 1913. Forty-Third Year.

CALIFORNIA STATE LIBRARY

THE FARM OF THE FUTURE.

[BY THE ASSOCIATE EDITOR.]

The desire to look into the future exists in every man, and has done so for all ages past. The following outline of the kind of farm that ultimately seems bound to come in California is simply based on an observation of tendencies and of the kind of farming that pays best, for one is justified, especially in America, in figuring that the thing that pays best is the thing that is going to be done. Certain causes bring certain results. The only difficulty is that never are observations of causes entirely accurate, nor is it possible to give each cause just its proper weight, and further, other causes entirely unforeseen may develop. Therefore, there are lots of things that may upset all this prophesy, and no one, at the best of it, is supposed to take it at anything more than face value.

Material Development.—The first great fact that is apparent under any conditions, unless everything goes to the dogs, is that the material development of agricultural California will be enormous. Abandoned farms are almost unthinkable, except perchance in spots where farms should never have been started. California's soil is too rich, her climate is too satisfactory for both vegetable and animal life to let any natural resource lie idle, and every piece of land that is worth using or that can be made worth using will be put to full use.

Kearney Farm of the University of California—With Background of Opportunity for "Farms of the Future."

That means, as one of the most important points, that all of the irrigation supplies will be developed and conserved to the utmost. California's agricultural richness has been fundamentally due to the richness of her deep soil, dry though it is by nature. Water here has been worth more than soil, and the future calls for the proper utilization of her streams. Irrigation has progressed by leaps and bounds in certain respects, but there are yet far greater areas of half barren soils than of irrigated lands. Never before have so many irrigation ventures, public and private, been started as recently. All of these will sooner or later be owned by the farmers who get the water. It is the only way that satisfaction can be secured.

But besides diverting the water from the streams, or pumping it up to canals, there is more to do; there is the storage of the great amounts that run to waste in the winter or spring. Storage also has barely started, and before many years have passed it will be rare to see at any time water running in large amounts unused to the sea and land lying almost idle through lack of water not far from it. This water, if properly utilized, is sufficient to irrigate nearly every acre of soil worth irrigating in California, and its development will more than pay.

No more, also, will drowning out of land be a problem. Water will be too valuable to waste, to say nothing about using it to absolute injury. We will have time to complete development when we get over the rush that is always a part of pioneer work, and not only our main canals, but our laterals, down to the smallest permanent ditch on the farm, will be concrete lined. Unnecessary land will thus not be used up with dirt banks, nor will it be run over with weeds or drowned out by sState Library 7-1-14 ter entering the soil will be used by roots, and what goes down will not be in such excess as to water-log the land or to make it require tile drainage, except in vary sandy soil and where water is cheap. At the most, it will but fill up the strata so that, traveling underground, it will provide water for pumps elsewhere to bring to the surface. Little water will go to waste in any way.

It will take years before we can put on the finishing touches, but they have shown, in the citrus districts of the State, how not to waste water, and it is only a short time until elsewhere an equally good use of water will be made.

Small Farms Coming.—The farm of the future will usually be a small farm, owned by the man who tills the soil, but the farmer will not be like a European peasant; he will be intelligent, educated and prosperous. It is proverbially true that the man who works for himself works best. Hired help will never expend the energy or display the interest that will be put forth by the man who is working for himself, neither will the tenant farmer make a proper use of the soil. When a man owns and tills just the land that he and his family can look after, perhaps with the help of a "hired man" or so, he will have a direct personal interest in his work, and can make that land produce in a way that hired help on a large ranch never could.

In part it is true that the successful farmer often buys the farm adjoining him to raise more corn to feed more hogs, to get more money to buy more land, and so on, but it is more often true that the big farmer farms only until he can subdivide his land and sell it to persons who will get more out of it than he ever could. As an actual fact, we do not remember ever visiting a large ranch in California where things were not run at more or less loose ends, or had not been so managed at some time or another, simply because it is practically impossible to hire good management that will get work done efficiently and economically with hired help. The only exceptions have been where the owner himself was resident manager and a man of brains and ability, working up most probably from the bottom and knowing from practical experience what he was doing.

There may be good absentee owned large farms, but the corporation owned farm, run by a hired manager, is usually too much of a fizzle to be very profitable; the individual farmer who knows his business makes such land give double the income it would under the best of big-farm management, and it is ridiculous to believe for an instant that, with things on a proper basis, the big land owner can hold out against the small owner. Furthermore, not even the best manager on a large ranch can secure with hired labor as valuable production per acre as the owner of a small farm who uses brains and muscle together.

(*Continued on Page 294.*)

Pacific Rural Press

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FRANK HONEYWELL - - - - - - Manager
W. H. SCHRADER - - - - - Adv. Manager
D. J. WHITNEY - - - - - Associate Editor

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Sept. 23, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	T	.41	.91	72	44
Red Bluff	.00	T	.46	104	64
Sacramento	T	.01	.21	104	60
San Francisco	.00	.08	.12	92	56
San Jose	.00	.17	.25	102	52
Fresno	T	.33	.08	106	58
Independence	.00	2.52	.05	94	56
San Luis Obispo	.04	.93	.29	110	54
Los Angeles	.00	T	.00	108	60
San Diego	.02	.10	.00	110	64

The Week.

September is proving dry and hot, as we suggested it might in some flippant comments of ours upon the recent work of the weather prophets. It certainly does appear that relying on sun spots is hardly justified, for during the last two weeks the sun has been working his full face and all his limbs and has made a new altitude-record for the thermometer in some places. Probably some sweltering person has expressed sentiments about spots as irreverent as the remark of Lady Macbeth. As between a hot wave and a heavy rain in September, the former is of higher economic value, in spite of its discomfort, and yet, except in quenching forest fires perhaps, we would be better off without either. There has been some grievous burning of grapes, even in the coast valleys, and consolation must be found in this year's higher prices for choice wine varieties in the claret districts. Hops fortunately got in ahead of the heat and have sold better than for five years—the only drawback to the fact being the danger of rushing in too much acreage again. Hops should always be regarded as an incorporation strictly limited, even if the Pacific Coast does lead the world in quality and this country in quantity.

The timely thing to do now is, of course, to get ready for the fall rains, for, in the nature of things, they are not likely to be long delayed. If you cannot find anything on the place which requires attention, go and call on your new neighbors. After the rains begin, you will be too busy to perform this kindly act.

Japanese for Florida.

Our Japanese friends certainly have an alert eye on the main chance. While the administration at Washington is trying to patch up an understanding with the government of Japan about the inappreciative law against aliens of our last legislature, the Japanese are looking out for themselves and are reported to be thinking about going to Florida, of which State, L. S. Mogi, "Japanese gentleman farmer of southern California," is reported to have said: "Florida is the only section in the country which can compete with California in the production of vegetables for the Eastern market. They have the climate and the soil, and we are trying to supply the settlers." By which Mr. Mogi means that he is getting up a party to emigrate to Florida, for Governor Jennings of that State has a tract of 61,000 acres which he is putting into intensive cultivation, and Mogi is the colonization agent, and he expects the best of the Japanese farming element will be taken from this State and placed on new tracts of land which are being opened up in Florida. Surely this ought to make diplomatic things easier for Mr. Bryan, for cannot he show that while the Governor of California wants fewer Japanese the Governor of Florida wants more of them?—and there you are. Things are in perfect diplomatic balance and Japan can go ahead with the Panama Exposition exhibit, for the Governor of Florida has saved her face!

Side-Light from Municipal Ownership.

Municipal ownership of public utilities is not our line, but we enjoy attendance at discussions in which the reform-doctors diagnose the present condition of city-sickness and prescribe remedies. Recently we heard such a discussion which seems to throw a side-light on the agricultural situation. This was the diagnosis: the city has given away to promoters of private corporations all those public utilities which yield a profit upon their operations, viz.: lighting, water supply and street-cars. It has reserved for its own ownership all those public utilities which can never yield an income over cost, viz.: street work, fire protection, police, schools, health preservation, etc. It is poor business to give away those branches which can be made to pay and keep those which must always be expense far above income. It would seem to be a very simple business proposition to operate those which do pay to meet the outlay upon those which cannot be expected to pay. It is no more difficult to design and operate a school system than a trolley car system, a police or street system than a water-supply system, a fire or health protection system than a lighting system. Our school, street, fire and health systems are in some cases admirably organized and operated, and in no case, probably, are less exemplary in their adequacy and efficiency than are the light, water and transportation systems as now operated by private corporations. Therefore if the municipality can own and operate one group of systems, it can also to great advantage own and operate the other and make income, now given away, help to meet expenditure which has to be provided by taxation. The experience of cities in all parts of the world, more or less distant, is demonstrating the soundness of this reasoning. All that we have to do with it is this: in all parts of the world except in Europe, producers of food products have kept for themselves all the branches of their business which called for great and protracted effort, large investment and great risk, and have given to others the other branches of public food supply which do yield great profits, viz.: trading, transportation, distribution, insurance and capitalization. They have demonstrated their success in handling productive systems which are just as difficult and full of risk as are distributive and financial systems. The same intelligence, thrift and energy which succeeds with one will succeed with the other, providing honor, expertness and diligence are employed as the service requires them. Municipal authorities, properly selected, are just as competent to select and employ such experts in all needed branches as are the directors of private corporations. Organized farmers can select the experts they need just as honestly and wisely as can either municipal authorities or directors of private corporations. Now apply the axiom that things which are equal to the same thing are equal to each other, and do you not get a side light upon what farmers ought to do, from the illumination of municipal reform which is becoming very bright now-a-days?

A Professor of Rural Institutions.

Some how this reflection recalls the fact that the Agricultural College at Berkeley is to add to its equipment a "professor of rural institutions." Those of the old-settled communities at the East who are working on the formula of the Irish reformer, that "agriculture is not a business, but a life," base their exhortations largely on the rural church, free for all denominations; on the rural school, free for all social functions and on the village market place, free for all producers to sell their wares out of their own carts or baskets to neighborhood consumers. A "professor of rural institutions" at the East would be an all-around exhorter for the establishment and maintenance of these very desirable and cozy little things, which no doubt would add much to the comfort and satisfaction of old-fashioned little farm life. But such things will cut a small figure with a "professor of rural institutions" in the West; and the farther west, the smaller the figure thereof. Because, as it seems to us, the rural institutions which we stand most in need of are those which will constitute our farmers more capable commercial and financial factors in the general development and prosperity of the country and therefore should work rather more along business lines and have less regard for social provisions which will arrange themselves in more satisfactory adjustments as farmers demonstrate mastery of their economic relations to other kinds of people and kinds of industries. Because of this conviction we are greatly pleased with the announcement that Ellwood Mead, who has lived the Western life and is well known to Western people, is to occupy the position of Professor of Rural Institutions at Berkeley. Professor Mead had charge of the Irrigation Investigations of the U. S. Department of Agriculture and of irrigation instruction at the University of California until he was called to Australia to carry out a great irrigation and development enterprise for the government of New South Wales. His contract with that government having expired and the enterprise being on its feet, Prof. Mead is glad to return to American surroundings all the wiser and stronger for his foreign achievements. He will be henceforward a leader and strong factor in the promotion of the types of rural institutions which the development of this State requires and he will work, we believe, largely along economic lines of local agricultural importance.

Another Tariff Menace.

It is hard to understand how the tariff reformers can still stand up and claim that removing the protective tariff will be a good thing for American agriculture. Every week brings to light new movements on the part of foreign producers who trusted too much to the declarations of speed in tariff legislation and started ahead with their goods so as to be in at the killing of our American products. Last week it was a matter of dairy goods from Siberia. Now comes from New York news of the arrival of one thousand quarters of Argentine beef, the first big shipment ever brought to the United States. The imports of such meat during June, July and August approximated three million pounds. The most of this great volume

of supplies came from Australia and Argentia. It nearly equals for the three months the amount brought into the United States during the entire fiscal year ended with May 31 last. The meat ranges in cost from 7 to 10 cents a pound in the country of origin. To this, of course, is added the transportation and other charges and the customs duty of one and one half cent a pound. It is expected that the importation of beef will be increasingly heavy throughout the present fiscal year, especially with the passage of the pending tariff bill and the removal of duties from meat importations. With the growth of the trade more lines of refrigerator ships will be inaugurated and arrangements now are being made, it is understood to establish several such lines through American capital.

This is surely a beautiful state of things, from the point of view of American agricultural production. Our great producing regions of the West and Southwest will soon be idle and the beef barons will be building steamships to bring in supplies from other countries. Oh reform, what crimes are being committed in thy name!

Farming Fashions Changing.

As proof positive that work for minor social community things will be unnecessary if you can only fix up the farmers financial things on a fair basis, we cite confidently the declarations of an automobile agent that the motor car is the great rural society reformer. And this is his proof: "Before the coming of the motor car, every funny paper was wont to portray the farmer with his face adorned with long hair decorations that were the envy of hair-store proprietors. The farmer gloried in his whiskers. It was the badge of his profession. Now it is hard to find a farmer wearing the long and pointed wind disturbers of days gone by. This is due to the advent of the motor car. Anyone driving a motor knows that it is impossible to handle a car with such an incumbrance as a lot of hair blowing in your face." And when a farmer cuts his facial forage, the evening-dress suit comes as a matter of course, because it so well befits the Napoleonic chin which is thus disclosed. It was noted a year or two ago at a meeting of the grange that a large proportion of the members appeared in evening clothes, while ten years before, not one would dress in the conventional costume of the man of the city. All this affirms also our objection to the Irish claim that "agriculture is a life" different from the life of the world. Give the farmer his financial rights, or better still, show him how he can get them for himself, and he will begin to live the world's life and to shine in it as he should.

Queries and Replies.

Grape Pomace and Cover Crops.

To the Editor: Will you let me know the value of grape pomace and grape stems as a fertilizer for my Bartlett pear orchards? My land is heavy and overflowed with water for a week or more in winter and spring. The soil runs together and is liable to turn up in large clods by the time we can plow. Would you advise lime to prevent this? If so, how much per acre? The temperature is sometimes as low as 15° Fahrenheit here in the winter. Would crimson clover do well as a soiling plant under such conditions? Burr clover grows well, but makes its growth a little too late in the spring. I have tried rye, but by the time the ground was ready for plowing, the rye was so tall it was very difficult to plow it under.—C. D. F., Ukiah.

A careful account of grape pomace as a fertilizer was printed in the PACIFIC RURAL PRESS of October 5, 1912. Old grape pomace is theoretically worth $8.67 per ton when mixed stable manure is worth $3.15 per ton. It is worth as much for pears as for other fruits, and may be more safely used on pears, perhaps, because the pear root is less liable to injury than some others. This stuff with lime (1000 pounds per acre) would be corrective of soil which is too heavy. An inch thick of the pomace all over the surface would be safe, and might be repeated two or three times at year intervals. Crimson clover would be killed at the temperature you mention and even by less frost, for it is very tender. Burr clover, vetches, field peas, etc., are more hardy.

Irrigating and Pruning Prunes.

To the Editor: Is it wise to irrigate a prune orchard soon after the crop is harvested? The trees make some growth immediately after the fruit is gathered. Irrigating increases that growth, which seems to be a preparation for next year's fruit bearing. Is it, then, wise to irrigate? Our soil needs more humus. We are thinking of planting a cover crop. Our near neighbor advocates bur clover for that purpose. Is that better than vetch?

When should our trees be pruned? Which stock is best for roots—myrobalan, almond, or apricot? We find that peach roots are not good, and we are doubtful about the apricot roots.—P. M. A., San Jose.

If there is danger of too dry soil in the autumn, for lack of retentiveness or because of short rainfall the previous season, irrigation after fruit gathering is desirable in order that the foliage may be retained longer and discharge its proper office in strengthening its fruit buds for the following year. It is perhaps not desirable that sufficient water should be used to start new growth so late in the season, but the effect of sufficient moisture upon the maturing of the wood which grew with the fruit is unquestioned.

The cover crop which is best for any locality is the legume which will make best growth in that locality. Bur clover certainly is the best plant in some districts, and the best evidence upon which to choose a plant is the successful experience of careful and observing neighbors, until at least you demonstrate differently by your own experience.

Your trees may be pruned at any time after the leaves seem to have discharged their season's work until the new foliage appears the following spring. It is not injurious to prune later than this, but it is inconvenient and expensive to do so.

The choice of stock for prunes, as for other fruits, depends upon the character of the soil and the availability of moisture. Myrobalan is best fitted for heavy retentive soils; the almond for free, deep, light soils; the peach for medium loams. The use of the apricot for the prune is much in doubt, both successful experience and quite the reverse being reported by different growers.

Cost of Drying Prunes.

To the Editor: I have a small orchard in the Santa Clara Valley, and about seven acres of it are planted in prunes. When I have work to be done in the orchard, I hire a man by the day. Some time ago I arranged with him to dry the prunes for me, he to charge for his services at $2.50 per day. There were twelve tons of green prunes, and dried they weigh about five tons. I have just received his bill covering the picking, hauling and drying of the prunes, and it amounts to $185, or about $37 per dried ton. How does this compare with the average cost of drying prunes in the valley? It seems high to me, although it must be borne in mind that he attended to everything.—Subscriber, San Mateo.

The cost is high, of course. If prunes usually cost that much between the tree and the cars, it would be hard to stay in the prune business—unless a man does the work himself and lives on the wages. But you had only about 34 pounds of green prunes per tree, and chasing them around had, of course, much to do with the cost per ton. Perhaps your man had also to work with the least efficient outfit and one most expensive to operate—all of which you caught on the payroll, of course. We have not the data to definitely answer your question. We would appreciate all figures which other readers may furnish: it would make a very interesting and valuable discussion.

Lemons and the Tariff.

To the Editor: I have a good location for growing lemons. I would like to plant in the spring. The only question in my mind is as to the effect of the reduction of the tariff on the future of the industry in California. I would like the opinion of the PRESS on this question.—D. M. E., Rialto.

It is fortunate that you asked for an opinion and not for a prophecy. If we had a place we were sure was very good for lemons, and if we had a desire to grow lemons in spite of the particular difficulties in handling that fruit, we should plant lemons. As for the tariff, we can not believe that an attitude resulting from a propaganda paid for by the New York importers will long satisfy the American people, who will be at the mercy of foreign growers and importers, and will surely pay more for lemons the more the country depends upon them for a supply. Our faith in the California lemon is commensurate with our faith in the good sense of the American people, who will not be long imposed upon.

Cover Crops at Watsonville.

To the Editor: We read with great interest the different articles about cover crops. We intend to sow our apple orchard to vetch this fall and would like to know if it is time enough to sow the vetch in the latter part of October? We have about five acres in young orchard which we could sow right now. Would that be all right? What is the best kind to use, the heavy or the winter vetch, and how much to the acre?—H. H., Watsonville.

You can sow now on land which has moisture enough to keep the plant going, even if rains should be considerably delayed. On land too dry for this you must sow just as soon as rainfall brings the soil into this condition. When that is assured, the earlier the sowing is done in your district the better. We do not know which vetch grows best in your locality. We should chance it on the "common vetch" seed which comes from Oregon; about 80 pounds to the acre.

Lime and Limestone.

To the Editor: Would you advise the use of the lime or the limestone as a fertilizer?—A. H., Santa Rosa.

For immediate effects on heavy soil, making it easier in cultivation and more hospitable to plant growth, lime is superior to limestone, the latter acting far less energetically but during a long period. For such purpose as lime is generally prescribed, it should be lime and not limestone.

Bearing of Small Fruits.

To the Editor: Would strawberries, loganberries, blackberries, and raspberries planted in the fall of the year in the vicinity of Los Gatos produce a commercial crop the following summer, with proper care?—Subscriber, De Kalb, Ill.

No: neither there nor anywhere else. Strawberries should bear, but hardly a commercial crop.

Small Farm Stories of Ripon.

[By Our Associate Editor]

Ripon is not a finished product. In fact, it has not really begun yet, for it is in the South San Joaquin Irrigation District and irrigation water has not arrived, though canals are almost completed and water in abundance will be on hand next spring. The interesting stories of farming, therefore, are stories of a temporary condition. Things will be different when the irrigation district is in full operation, but they will also be better.

For those who do not know it can be said that Ripon is a small town in Southern San Joaquin county, close to the Stanislaus river and that the farm stories do not come from Ripon but from the farms about it.

Success From Lines Overlooked.

To our mind the greatest object lesson of the district for all of California and the rest of the country to boot is given in the work of Arthur Roberts, looked upon as a shining example for farm methods. His proposition is not the usual one of finding out what soil and climate is best adapted to and then growing it according to the most approved methods. It is rather growing those things which are not commonly grown and therefore having a very profitable market right at hand. This means intensive cultivation and lots of work on small areas, also lots of profits.

Atwater is the sweet potato distrct, but Mr. Roberts make big profits from a small acreage of sweet potatoes. Sebastopol, the Pajaro Valley, and other coast or around the bay sections have most note for berries. Ripon berries could perhaps hardly compete with them on even terms, but great profits come from the adaptation of suitable methods for soil and climate to berry growing and from supplying of local markets, and so it is with other things.

The most profits have come from strawberries. He had some land north of town on which was a windmill with sufficient capacity to irrigate perhaps an acre and a half. Irrigation was done direct, although more efficient results would have come from the use of a reservoir. Among other things a quarter acre of Jessie and Longworth strawberries was planted a couple of years ago and cared for by the matted row system.

The soil was a sandy loam and rich, though shy of humus, like most valley soils. It was plowed deeply and a heavy dressing of manure given. Then a crop of potatoes was raised, then a crop of corn and in November of the corn year the strawberries were planted. Next summer they naturally bore only a few berries, but the following summer they produced two tons of fruit, which sold for $330 and in addition $45 worth of plants was sold in the fall. Quite naturally, such prices were only possible by having a retail trade, or selling to local stores. That is the point of the whole thing. Next year returns grossed $280 and this year they will be $200.

Weather is pretty hot some times and success can come only by keeping the water on much more than would be necessary near the coast. When the bearing season is on, irrigation is done every four or five days and the rest of the summer every 12 days or so. All the work on the plot, including picking, by the way, was done by Mr. Roberts and family, the strawberries being only a small part of the farming.

A new piece of land has been developed since last fall on the edge of town. This is irrigated by a four-inch centrifugal pump and a six horse power Samson gas engine. The lift is 30 feet (total) and the land can be irrigated at the rate of about an acre in three hours, the cost being approximately 90 cents for a 10 hour irrigation. There are under this about 12 acres planted and more in preparation. Among the crops growing are 5½ acres in sweet potatoes, several acres of strawberries, and some blackberries, rhubarb an dother small fruits or vegetables.

The strawberries are in checks 50 feet square, with the strawberries in rows about 30 feet apart in ridges. Four checks are irrigated at once, the water filling the space between the ridges. It might be said that ample manuring is desired for strawberries, but when there is a lot of warm weather there is a great danger of the manure burning the plants up. That is why it was well to grow a couple of crops before planting the berries in the plot first told of.

At the windmill, mentioned first, a quarter acre plot of blackberries returned at the rate of $600 per acre one year, the berries selling on an average of $1.15 for 15 one-pound baskets. Sebastopol can perhaps beat out Ripon for berries, but they don't make profits like that, because these were available fresh to dealers where everybody else thought berry growing unprofitable.

Some wonderfully fine rhubarb was also grown, but the summer is too hot to grow it for shipping and the water had to be kept on double what would seem necessary in a rhubarb district, but the profits were there also. The sweet potatoes are doing finely also, though it is too early to state yields or profits, but there is a fine local market and this will be a regular crop.

Nearly all of the things that Mr. Roberts grows are sold locally or to merchants within easy reaching distance. Those that have to be sent to San Francisco also bring full market prices, for only the best are shipped and these to a commisson house of long standing. Mr. Roberts has always steered as far as possible from new commission concerns, the kind that make most of the trouble.

One product that has to be sent regularly to the commission house is turkeys, of which quite a number are raised. Mr. Roberts thinks they are the best grasshopper control in existance and in fact, whenever insects get bothersome around his truck farm he takes the turkeys down from his home ranch, which owing to the dry year is mostly unfarmed, turns them loose and they soon clean things up. He had a bunch already on the spot the date of our visit.

It would take too long to tell everything about this system of farming, but the big profits in growing to sell locally the things that are not ordinarily grown and raising them in the right way for conditions (which may not be the same way as in the regular place for growing such things) has been well demonstrated.

What Can Be Done With a Windmill.

Now we saw lots of nice things around Ripon and will have to tell of most at other times, but a description of a windmill irrigation plant of Benton Lewis about a mile south of town fits in too well here to neglect.

Mr. Lewis is a carpenter, as is also his son, who lives with him and shares the farm work as much as carpenter work will permit. They have a 40 acre tract which is mostly dry farmed, Egyptian corn being a favored crop, but also have a very highly developed four acres or so around the home that owes its value to two windmills, storage reservoirs, etc.

One of the windmills was put in for house use and has not much capacity. The other is an irrigating plant pure and simple. Two wells are sunk near together and connected by a walking beam to a 12-foot windmill. They can be operated either together or separately. The wells are about 52 feet deep with the water standing at 16 or 18 feet. The material for the whole outfit, including cement for reservoir, cost something over $200 and the work, if it had to be hired, would bring the cost up to about $300. That can be said to be the cost of the irrigation facilities.

The reservior is made of concrete, is six sided, and 24 feet from corner to corner. The walls are 4½ feet high. When the wind is blowing at a comfortable rate the windmill will fill the reservoir in from 6 to 7 hours. It need not be said that irrigation from a reservoir where there is a good head of water is vastly superior to irrigation from a pump with small flow. This reservoir can be emptied in 25 minutes and will irrigate a check of alfalfa 20 feet wide and about 240 feet long. The flow from the outlet resembles that from a good sized centrifugal pump.

The outlet is from a terra cotta pipe set even with floor of reservoir and on ground level; from which the water will flow by gravity to all parts of the couple of acres around it. The inside opening of the terra cotta is of regular sewer pipe and a wooden plug is fitted into it, packed with leather to prevent leakage. A rod leading down to this works so that this plug can be pulled out as far as is desired to regulate the flow.

From this windmill, with some help from the other, which is near the house, two acres of alfalfa are irrigated, and about two acres of orchard with catch crops between, also berries and other crops around the house. The oldest alfalft is close to the windmill and contains a little less than an acre and a half. Six cuttings have been made from this and the seventh is far along and looks finely. Last year it produced 15 tons. It is part Turkestan and part common alfalfa, the Turkestan appearing to be the better.

Between two rows of trees there is a fine looking row of sweet potatoes and as nice a row of peanuts as one would like to see. Other rows had beans and shorter lived crops between and besides quite a number of white potatoes are raised every year, either in the orchard or in the open. The sandy loam soil is excellent for them.

The rule is to plant them as soon as is safe in spring, to harvest them when ripe in June and July and as soon as they have cured sufficiently to plant from, to put in a second crop. The first planting has to be irrigated about twice, the second about every two weeks but so irrigated, they certainly look well and are said to be very profitable. The ground on which the potatoes are grown is changed every year and is fertilized with stable manure.

Chickens are kept and turkeys. Besides the orchard there is about a quarter acre in vineyard, raisin and table grapes. Nearly all the produce is used on the place or sold to the neighbors. There is water enough to make a fine garden, though the ground could produce more than it does if more time was given it. Still it is a show place and everything that is raised is given the best of attention and produces abundantly of fine crops.

As an incident it may be said that no cow is kept, though some horses are. There was a standard bred mare to do the work but she died this summer, leaving three colts or young horses to mourn her loss. The two-year-old and one year-old are of Percheron stallion and in appearance would seem to be high grade Percherons. This year's colt is by a standard bred stallion and does not look much like an orphan.

It is generally recognized that to raise good horses they must be barn fed and it can truly be said that the older colts in size and quality look as if raising such horses on the small farm, provided the mare was of good quality and the stallion what he should be, was one of the most profitable kinds of farming possible.

Odds and Ends From a Fruit Ranch.—The main excuse for writing this is to tell how good tillage conserves moisture, though some other things are spoken of. We recently visited the ranch of J. P. Watkins on the banks of the Stanislaus river, west of Ripon, and saw peach trees as happy as trees would like to be on 6 inches of rainfall and lots of cultivation.

Mr. Watkins is an old time farmer from the Lodi country and knows his business. About February he guessed that prospects were for a dry year and instead of letting the winter growth continue while waiting for rain, he decided to get busy with the disc harrow, not the plow. The plow is all right when there is lots of moisture and if the rains come the plow would have been put on anyway. Instead the disc was used over and over again nine times and a nice dust mulch made. This cultivation has been kept up to prevent a crust from forming with the result that the trees are in excellent condition. All of which shows that the best ordinary methods are not always the best.

A peculiar little fact is that some cherry and prune trees planted for a family orchard have some blossoms on now in the middle of September. Probably red spider cut off the leaves, though perhaps it was hot weather, but there was moisture enough in the round from good cultivation to make the trees think it was spring later on. This probably will destroy next year's crop, but it shows what cultivation can do.

There is a capri fig tree on the place, the wild fig needed to make Smyrna trees bear. This tree

is about 30 years old and evidently was planted as a cutting from Asia Minor under the supposition that it was a Smyrna fig, as at that time the need of capri figs was not clearly understood. Curiously enough, when Mr. Watkins discovered this tree in a mass of brush and suckers five years ago at the time of taking the place, the fig insects were already there. He has sold $35 worth of figs per year to fig growers who needed them from this one tree. Frosts have never cleaned out the figs in winter, though the insects seemed to have been weakened by January's cold spell and were not as good this year as usually.

We landed on the ranch at the hottest part of the hottest day of the month and instinctively noticed the underground store room, which may perhaps be duplicated on a large percentage of ranches. If not, it ought to be. It is just a square hole dug in the ground and has a regular roof for covering, which roof is covered with a thick layer of soil. Steps go down at the east end and just under the peak at the other end is a place for an opening. The rule is to open this at night and close it in the morning, though it had not been opened for some time. Now moisture is cooling and there was no moisture or moist material in the roof, yet was very pleasantly cool though exposed to the direct rays of the sun. Put on the north side of a tree, with moisture to evaporate and closed up so warm air could not enter, it should be a most excellent store room and cooler, for it was quite cool under the adverse conditions existing.

Nice little stories like this can be found all over where the right men are in charge of a farm, but the problem is to light upon them.

More About Prune Pruning.

To the Editor: Will you kindly allow me space to extend my article published in your issue of September 16?.

In the leading article of the RURAL PRESS of that date, mention was made of a tree which had been pruned by a cow. Thinking that the tree was either small or the cow was unusually active, I made a trip over to Mr. Norton's. The cow must have been in good training at the time, for I found the tree to be a large one for that section of the country. The tree is interesting, in that it bears out what ideas I advanced in my former article. By the opening up of the tree new laterals have been started from the main limbs, and the growth of the year 1912 which has not been shortened is full of strong fruit buds, while that which was clipped last pruning season has a bunch of sprouts with no fruit buds worth mentioning. The tree is in a most advantageous place for growth, being at the foot of Mr. Norton's lawn; consequently being green when the rest of the orchard is almost bare of leaves. As to giving a good reason why prunes should not be pruned in the same way as other deciduous fruit trees, i. e., the "annual shortening in of the current season's growth," it does not seem to me to require any great stretch of the imagination to construe the saving of labor and the earlier bearing of the trees into "good" reasons for a different treatment for prune trees.

Mr. W. H. Ward of this locality has an orchard which is a good illustration of this point. The trees are all on Myrobolan root. Four or five rows of trees near the creek are much more vigorous than the balance of the orchard. These rows did not come into bearing until about the eighth year, while the rest had been in bearing for two years previously.

The moral is plain, do not prune the vigorous trees too heavily when they are young, whatever treatment may be found necessary later on. The bunching of all deciduous fruit under one general system of pruning reminds me of the famous song: "All coons look alike to me."

Taking plums trees alone, there is a wide divergence of treatment necessary to good results. Some varieties need drastic measures to keep them in shape, and it is next to impossible to stop them bearing, while other varieties are easily driven to too much growth, and are shy bearers.

Again, take peaches. Any man of experience knows that the clipping of everything big and little which can with impunity be applied to the Muir peach would be disastrous if applied to the Sellers Cling, or even to the Foster when it buds lightly.

The reasons why peaches and other varieties cannot be allowed to go without heading back are very well given in Mr. Wickson's book, "California Fruits."

Replying to Mr. Quien, it is inconceivable to me how there can be any objection to reducing the fruit-bearing area in a tree which is so full of brush that a sparrow could not fly through it without breaking a leg, as are thousands of trees in this valley.

Further, how can results be expected to be satisfactory if the trees are heavily pruned once in a while, and then be allowed to go without pruning at all?

I would suggest from the look of the prune trees, both 'French' and Sugar, that a heavy pruning would be advisable this coming winter, as they are full of fruit buds from top to bottom. Ten tons per acre of prunes in two years is better than ten tons per acre in one year and nothing the year following.

If the trees are pruned heavily after a light crop and vice versa, that would appear to me to be a normal method of procedure, as after a light crop, there is sure to be a heavy set of buds. Get the trees to bearing half crops all the time, if possible, and improve the quality.

ERNEST A. DUNIPACE.

Morganhill.

THE AZOREANS AND THE ORANGE INDUSTRY.

To the Editor: In regard to the article in the P. R. P. of August 23, 1913, on "Orange Decline in the Azores." I wish to say that Mr. Crecvey's data as to the orange industry and the disposal of the product, years gone by, is true. But concerning the possibilities of a great opportunity which is being neglected; Mr. Crecvey has been misinformed. As to the paying basis of the orange industry, if—it should be carried on scientifically, why should the ignorant Portuguese (as he is classed by many) cultivate, prune, and in fact, do all that is possible to produce the greatest results under scientific conditions? Why should he go to all this trouble and expense, simply because there is a possibility of raising a crop of oranges, while, on the other hand, he is not able to dispose of same profitably?

The reason why the orange tree is so neglected on these islands, is because, there is no money in such a crop at the present day. It is because good oranges retail today on these islands at prices varying from 5 cents to 20 cents per dozen (as Mr. Crecvey states), even when there are so few raised. What would they retail for if large crops were raised and no one to buy them?

While England was at one time a heavy purchaser of oranges from the Azores, there is no reason why she should buy any from them now, when she can, and has been getting her oranges for many years past, from elsewhere cheaper, than she could get them from the Azorines; regardless of cheap labor.

Why does not Mr. Crecvey try his hand at the great opportunity that he sees going to waste? I think he is making a big guess as to what could be done, if this culture could be carried out scientifically and the possibilities of a good market condition. But it's only "if" such a crop, with the present conditions, could be sold at a paying basis.

Believe me, if there is any such opportunity to be had on the Azores Islands, the thrifty, hard-working Portuguese will see it, and doubtless will take advantage of the same. They are after the money as well as the English speaking people, and but very few good opportunities are being passed up by them. E. P. R.

Clipper Gap.

IRRIGATION IN THE AUTUMN.

To the Editor: I have a large number of French prune trees that have been very badly hit by the drought of the last 2 years and I wish to know if by your opinion water (250 gallons each) and say 2 pounds of nitrate of soda applied at this time of year would tend to strengthen them. I may add that these same trees were given the above dose in July, 1912. They responded very nicely and looked fine up to about 2 months ago. Since then they have begun to die back considerably.

Also, would you advise leaving the dead wood until the spring when the trees are green, and then cutting it out? Is the nitrate absolutely necessary?

Since writing the above I have been reading the Press of the 6th in whch Mr. Leonard Coates gives advice to cover just my case, but he seems inconsistent or else my understanding is greatly at fault, for I understand him to say that water would be of no use at this time and then he goes on to say at the end of the article that the proper time to irrigate is in the "fall and late spring."

Also I wish to take issue with him on his assertion that shallow irrigation in heavy land (mine is all adobe) is not a good thing. If he will do me the honor of calling at my ranch I can show him what a small pump, throwing less than 1,000 gallons per hour, did for my prune trees on Myrobolon root in adobe soil. He can compare them with other trees on the same soil that didn't get the water.—Hartless Moser, Cupertino.

(We hold that such an amount of water as you propose will keep a large tree from further dieback, until a good rain comes to do the same job. What you need now is not water for growth but to enable a dormant tree to protect itself against a drying out of tissue which kills. You should have irrigated them two months ago, just as you did in 1912. This would have held the foliage longer, strengthened the buds and enabled the trees to wait for rain. It is probably too late to get benefit from nitrate on deciduous trees. If you wait to cut out dead wood until spring you will probably not do it at all; otherwise it would do to wait. Mr. Coates can best explain his own prescription.—EDITOR.]

FIGURES ON PRUNE PRUNING.

To the Editor: In line with the talk on whether it would pay or not to adopt the French method of pruning in our prune orchards, arithmetic seems to show that it would be profitable, though perhaps trial would prove the contrary. The first advantage would come in the larger sizes. The California system of little or no pruning results in small sizes, a fault of California prunes since they were first introduced. The French prunes from the best of information obtained appear to run about 20 points larger than California, which would make a difference of $20 per ton in favor of the pruning. While a ton is above the average in California prune orchards, it is much less than many well cared orchards on good soil produce and say that the average on a good orchard was a ton to the acre, without a pound gain in output, the increase in value would thus be $20 per acre, surely enough to justify pretty careful pruning.

Another point is in the increased tonnage, for there is no doubt but what good, systematic pruning would make for more uniform production and a higher average. It would be fair perhaps to count this increase in yield as proportionate to the larger sizes. That is, with exactly the same number of prunes on a tree the weight would be as much greater than the California weight as French sizes were greater than California sizes. Thus, if the French sizes were 60 and the California 80 (the 20 point difference) and the California pruned orchard produced a ton, the French orchard would produce a ton and a third. The original ton would bring $20 more than the ton from the unpruned trees and the selling price of the extra third of a ton would be velvet.

There seems to be no doubt but what the open pruned tree is stronger and less affected with pests than the close growing tree (on account of fresh air and sunlight) and the buds, like all strong buds, more resistent to frost injury. Furthermore, the cost of propping would be saved, all of which puts a good big balance in the hands of the owner to pay for extra pruning costs. How the thing would work on trial can only be told by trial, but the chances look so bright that any prune grower ought to jump at the opportunity of improving his orchard and increasing his profits. W.

The Farm of the Future.

(*Continued From Page 289.*)

This fact is becoming more prominent all the time, as good hired help on the farm is becoming more difficult to secure every year and good help does not remain help, but secures land to work independently. Fortunate it is that it is possible for this to be so, and, despite the increasing value of land, it evidently seems bound to continue that way.

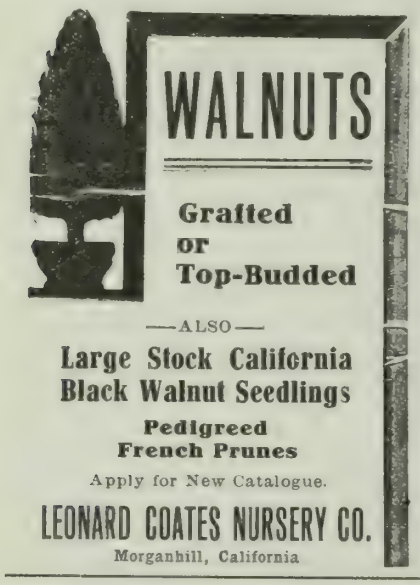
Co-operation and Finance.—The historian may point to the fact that agriculture in Europe, peopled by the races from which Americans have sprung, has largely developed into the tenant system, or the large holding with out-and-out hired labor, but here there are two things that can prevent such development. One is co-operation in buying and selling, the other is a sound system of farm finance. The first we have started on a firm footing, and with it are making rapid strides. The second we have neglected, but every reader of the Pacific Rural Press will know from what the editor has written of his observations in Europe that soon we are going to be as well fixed here as they are across the Atlantic.

For its effect upon agriculture and small holdings this means that the young man with ability and initiative can get hold of a farm on his personal credit at what is at present an unbelievably low rate of interest; he can have half a lifetime to pay the debt, due allowances being made for bad seasons and unavoidable injury to crops. Farm credits can let capable men get hold of small areas even if they have little or no credit. That is one reason why we will have small farms, owned by the tiller of the soil, and why the impoverished peasant of Europe should never find his counterpart here.

Co-operation joins forces with this. The small farmer once could not sell his produce to the same advantage as the big man, nor did he have the necessary business ability and experience to do so. Thus what the big owner lost in not being able to make the soil produce well, he more than made up in buying, selling and financial management. Here in California, by our great co-operative selling agencies, the small landholder sells for as good prices as the large holder, and to better advantage than the large holder could if he tried to go it alone. His shook and other materials come to him at cost price, and the former advantage of the large owner is overcome. We look to see the time when all of the buying of the farmer and all of the selling is done by co-operation at prices better by far than present prices; when he can get the funds he needs for farm work at little charge, and when the small holder will have every advantage socially, intellectually and economically to make life agreeable and profitable.

Diversified Farming.—The farm of the future will be a diversified farm. California is probably the greatest country of the world for specialized farming, particularly with fruit, but also with nearly everything else. That is due, first, to the profits from successful specialization, but likewise to the fact that land is undeveloped and we can afford to be extravagant. The one-crop farm is an extravagant farm, in a way, for it does not make full use of the soil. Rotation of crops is always known to be best, and nature seems to want to produce a variety of things. Her grasses are mixed, the brush on hillsides or canyons is diversified, and the soil fights always for more than one kind of plant. The proposition is simply this: when the soil gets tired from a single crop and wants to grow something else, plant the something else that will make the best use of unutilized plant food.

In orchards, for example, we are coming rapidly to that. Our trees, with hardly an exception, are being planted farther apart, and alfalfa or other crops are growing more and more between the rows. We will keep it up until most of us will grow trees in with annual crops, not unimportant crops in the orchard. The isolated tree bears heaviest of fruits or nuts; it is cleanest of insect pests or disease, and is vigorous and healthy. Get a whole orchard of isolated trees, so to speak; that is, have them so far apart that they might about as well be isolated, and it goes without say-



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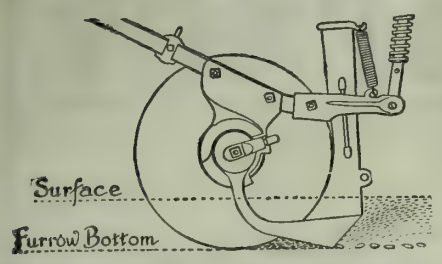

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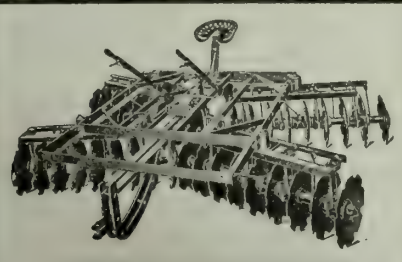

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ing that production per tree is vastly increased. By that system the other tendency of annual crops in the orchard is encouraged, and we will grow more alfalfa, beans, melons, or what not, by far than in the crowded orchard. We kill two birds with one stone, and although, for example, the yield per acre with prune trees about 60 feet apart may prove to be less than when they are 30 feet, the difference will be much less than the gain in interspace crops. That gives the soil the chance that nature seems to so strongly desire to rest herself by having a variety of occupations, rather than year after year growing the same thing with artificial help like cover crop, manure or chemical fertilizer.

These things will only come, of course, when a change in labor conditions and land values make it necessary and profitable. Specialized farming may be most profitable for years to come. It is that diversified system, however, that has developed in the older countries, and why not here?

LIVESTOCK A BASIS.—Livestock will be a fundamental thing in California agriculture, and it will be livestock on every farm rather than the orchard here, the truck farm there, and the dairy beyond. The white race naturally is adapted for livestock management, and the land requires it. Manure is the greatest single thing needed to keep up the strength of a soil, and it is only a question of time until the demand for manure will make those that need it get stock, for people with stock will think so much of the manure that they will not sell it.

This means also the breaking up of the straight dairy farm as a common feature. All investigators are unanimous in the statement that the bulk of the net profits from dairying year in and year out comes from the manure. On the California dairy farm with alfalfa everywhere, the soil gets its nitrogen direct from the air. Nitrogen is the greatest part of the manure for fertility, and to put this back on alfalfa means a big waste in comparison with what could be done if it went to fruit or field crop and the alfalfa was given only phosphorus and potash. We don't especially feel that pressure now, but we will when only the best farm system will be profitable.

Furthermore, there is an advantage to the cows in living just three or four on the farm. They are healthier, for it is no good life for a cow to be locked up in a dusty or muddy corral month in and month out with 20 other cows, some of which are fairly sure to have tuberculosis; and when one has this disease, others surely get it under those conditions. A family cow with a good start and well cared for is a healthy cow and usually a good producer.

Furthermore, this is cheap dairying, for there are a variety of foods (which is pleasant and healthful for the animals) and many of these are by-products, cull apples and fruit, bean straw, etc., which is cheaper than raising feed as feed. We are even starting rotation of crops with alfalfa; we are planting alfalfa in the orchard and coming to diversified farming in theory and practice. No country in the world is better fitted by soil, climate and markets for diversified farming than California.

We will have large ranches, too; we will raise cattle on the range and fatten them on farms, specializing more or less on this; we will have small farms mostly, with a cow or so and a couple of hogs, perhaps a few sheep to keep things cleaned up, and some poultry. We will make the most of our material development. We will develop by co-operation a cheap and efficient method of distribution to and from the farm, and our farmer will be an intelligent, progressive and prosperous man.

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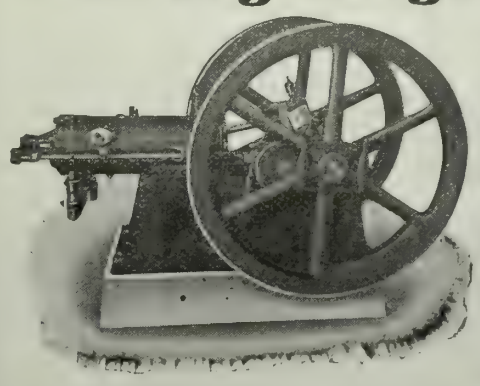

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California Potato Moth at the North.

It is not exactly our worm: in fact, if anyone wants it let him carry it away! But it probably enjoyed the California climate better than any other—just as other immigrants do—and, finding this a good place to work, went to it in most pernicious activity.

This worm has been amply published about in this State, but recent comers who grow potatoes here may not have access to the records. For them we give the following very good outline from the pen of M. A. Yothers, assistant entomologist of the Washington State Experiment Station:

THE POTATO TUBER MOTH.—For several years the Potato Tuber Moth or Potato Worm, as it is sometimes called, has been the worst potato pest in California, where it has done hundreds of thousands of dollars damage annually. During the last couple of years this pest has been found establishing itself at several places within our State. It has been received in shipments of potatoes from other parts of the country. This is the manner in which it will get introduced into new territory, and every precaution should be taken to prevent this introduction.

This insect is not only abundant in California, but is well known in Hawaii, Australia, Algeria, and many other countries, including Sounthern Europe. The same species, or one very closely resembling it, is a common tobacco pest in the Southeastern United States, where it is known as the splitworm.

WHAT IT DOES.—The adult moth, which is about one-half an inch from tip to tip of wings and about one-fourth of an inch in length and of a grayish color, lays about twenty pearly white eggs upon the leaves or upon exposed tubers in early summer or upon the tubers at digging time. These eggs hatch into tiny pinkish white larvae which feed upon the leaves, stems or tubers, or only upon the tubers when they are stored in bins during the winter. They burrow all through the tubers, rendering them useless and unfit for food. In from four to six weeks the larvae get their growth, and then they seek a sheltered place, spin cocoons about themselves and transform into pupae. In the summer this pupal stage lasts about two to three weeks and the adult moth appears again and lays eggs for a second brood of larvae. The moths live but a few days. By late fall the larvae have developed into the pupal stage, in which state they remain over winter, adult moths appearing in the storage bins in late winter or early spring. The adult moths are night fliers, and if tubers are left exposed over night when dug in the fall, the moths take occasion to lay their eggs on them, thus causing an infestation in the tubers in storage.

WHAT TO DO FOR IT.—The Potato Tuber Moth is difficult to control, as it is impossible to reach the larvae in the mines in the stems and tubers in the field. This makes it necessary to proceed against the pest by other methods, of which several should be employed for the best results.

First: Only those potatoes known to be absolutely free from any signs of the pest should be used for the seed.

Second: Deep planting and hilling should be practiced.

Third: With this, as with most all other insect pests, one of the most important measures of control is clean culture. All weeds in and about the potato patches should be destroyed by burning. This will eliminate breeding and hibernating places for the insect.

Fourth: Potatoes should be dug as early in fall as possible, and not allowed to remain in the field over night unless carefully covered.

Fifth: At digging time all tubers found infested should be put in a bin and fumigated. Infestation can be detected by the presence on the tubers of the excrement of the moth. After the tubers have been sorted and placed in the bin they should be fumigated with carbon bisulphid (or bisulphid of carbon, as it also known) in order to kill any stage of the insect present at this time.

Carbon bisulphid is applied by pouring it into flat vessels, such as pie tins or milk pans. An average of three pounds should be used in each one thousand (1000) cubic feet of air space. The tins should be placed on the tubers. The gas, being heavier than air, penetrates downward through the mass to the bottom. The bin should be tightly closed for 24 to 36 hours, without injuring germinating power of the potatoes.

As this gas is very inflammable, and serious fire or explosion may result, the utmost care should be taken that no fire, such as a lighted cigar, electric fan, stove, or gas light or lamp should be brought into the vicinity of the gas. The gas is also very poisonous and should not be breathed. Upon opening the fumigating bins they should be aired for at least 24 hours in order to remove all danger from fire or explosion, and also to remove the offensive odor.

Sixth: Sheep and hogs are valuable for the destruction of such remnants as are likely to be left lying about in the field at digging time and should be turned into the field when the potatoes are removed.

Seventh: Crop rotation is valuable where practicable. Leguminous crops, like beans, peas, alfalfa, and clover are not only good alternate crops, but are valuable soil restorers.

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Growth of the Farmers' Union.

C. S. Barrett, President of the Farmers Educational and Cooperative Union of the United States said this, in an address at the national convention of that body, at Selma, Kansas, this month:

During the past year we have organized more new territory than ever before. When you hear skeptics, which is but another name for your enemies, say: "The Farmers' Union is going the way of all farmers' organizations and is falling to pieces," you just hit him between the eyes with that statement, and if he is still skeptical, we can supply him with incontrovertible proof.

I have traveled in the past year fully one-third more miles than at any time within my seven years as head of your organization. That means that I have spent very few days in my home, and altogether I have been at home less in the past several months than ever before. East and west, north and south, I have traveled almost constantly in the cause, and I have come in personal contact with more individuals, attended more meetings, addressed more gatherings, presided over more deliberations than in any of the previous seven years.

I have visited more enterprises from one end of the country to the other than ever before. I have made personal investigations, talked with the men at the head of the enterprises and have seen the work they are doing. I want to say with all the emphasis possible that nowhere have I found ought to feel discouraged over. More of these enterprises are prospering and giving satisfaction than ever; we have had as few, perhaps fewer, failures than in other lines of business endeavor.

I found with great satisfaction that more and more of these enterprises are being changed from joint stock concerns to purely co-operative plants. This is a hopeful sign, and one meaning much to the Farmers' Union. These enterprises are demonstrating to the world that solid, sane, conservative and successful business men can be recruited from the rank of the farming class.

Out of the hundreds of enterprises I have visited in the past year, a very small percentage failed to show signs of success, and even these few were striving to get on their feet. More and more were developing the right sort of men for these undertakings. It takes grit, loyalty, stickuitiveness and common sense to make them succeed. We want and welcome all of that kind of men we can find.

More letters of inquiry concerning the Farmers' Union have reached me within the past twelve months than for the entire six years prior to this time.

SCARCITY OF FRUIT ABROAD.

To the Editor: Your editorial in last week's PACIFIC RURAL PRESS in which you compare the Mediterranean fruit conditions with the Californian, and speak of finding the fruit so poor and scarce, is so true that I feel I want to write you about it. I have lived 12 years in Salisbury, Rhodesia, Africa and returned to California only this year. I came up the east coast of Africa through Italy and France into England, covering much of the ground that you have just covered.

I had thought that when I got to Naples that I would find an abundance of fine fruit. There I was told it was better toward Rome, but there I was disappointed again.

Now I am in California. I am told that we need protection from these countries or they will flood us and our markets with their cheap fruits. I feel California people should know that there is no fruit country they need fear, and that they are able to compete with the world in fruit production if they will only grade properly, and pack as the market demands.

I bought Los Gatos prunes in Salisbury, and most of the canned fruit is from California. Cape Colony and England supply most of the jam, but Heinz' ketchup and pickles are largely used.

I am well acquainted with Mr. R. McIlwain of Salisbury; I believe he has corresponded with you for some time. If there is anything you would like to know about fruit or trees or flowers of Rhodesia I will be glad to tell you all I can. I was Curator of the Public Gardens, Salisbury, for 10 years, so am fairly well posted in some lines. HERMON BROWN.

Gilroy.

[We are glad that you are back in California and you are probably as glad of it as we are. The general absence of fruit abroad does not alter the fact that they have lots of oranges, lemons, and raisins in the Mediterranean district which California growers of better fruits should be protected from. Other parts of the world like the West Indies, Mexico and Central America, should not be allowed to pest us in American markets with their cheap labor products.—EDITOR.]

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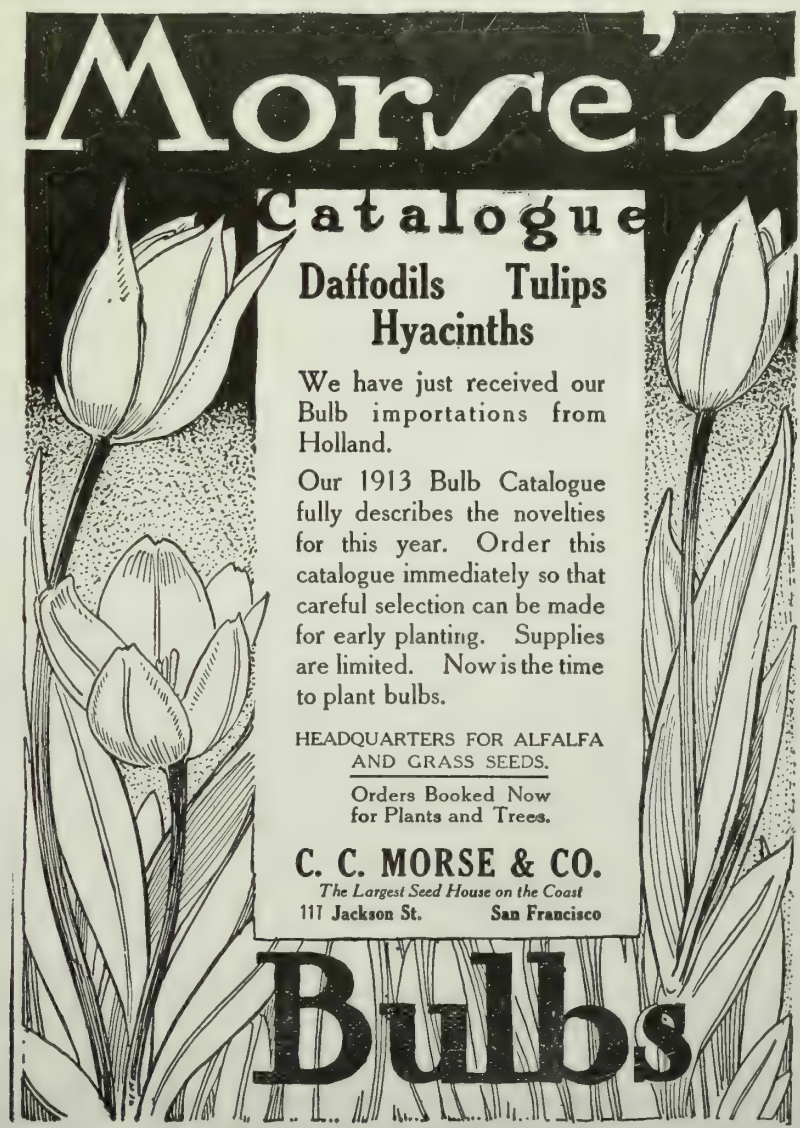

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AGRICULTURAL REVIEW.

With the Fruit Men.

The California Fruit Auction Co., by resolution, has provided for the removal of office and auction rooms from Colton to Los Angeles. The headquarters will be in the Hollingsworth Building.

The California Cured Fruit Exchange announces that the prune market is advancing in a very remarkable way. Apricots continue steady with only fair demand, the pear market is strong, apples and figs are holding up, and owners of peaches are showing a better tendency to hold for legitimate prices.

A profitable method of procedure has been followed by the school authorities at Hemet, who postponed the opening of the high school to help out the cannery, which otherwise would be left with too little help.

The San Jose Grange endorses the statement of the RURAL PRESS that prune trees should not be irrigated at this time unless they were, through summer irrigation or otherwise, in good growing condition.

P. C. Siple, of Oakley, Contra Costa county, has been experimenting with walnut trees on some sandy soil on his place and reports very promising results.

Grass Valley growers are favoring the holding of a pear show next year.

Progress is being made in the development of the fruit-shipping industry at Oroville.

From Whittier 28 carloads more of valencia oranges were shipped this year than last. The Whittier Association will pay to members between $75,000 and $100,000.

The Del Monte Junction Fruit Growers' Association has been formed by fruit men of Castroville and San Miguel Canyon, Monterey county. It is a strictly co-operative marketing organization.

A meeting of the dried fruit men who were getting up the $250,000 dried fruit company has been called for October 4 in Fresno.

Considerable damage has been done to the walnut crop in several places by the heat of last week.

The California Cured Fruit Exchange has another association as member, which was recently formed at Hemet, Riverside county. There are now constituent associations in all parts of California.

The apple crop of the Yucaipa and Oak Glen ranches will amount to 100,000 boxes this year, according to the Yucaipa Record.

The new company formed at Lodi to manufacture products from orange culls is contracting with Tulare packing-houses for the culls of this fall.

The fact that often the buyer of fruit has as much to complain of the farmer as the farmer of the packer is indicated in a suit brought in San Jose by Rosenberg Bros. against a grower who contracted his prunes this summer and when prunes went up tried to hide most of his crop to sell later for a higher price.

The Department of Agriculture is planning a quarantine of avocadoes and avocado seed to keep out the avocado weevil.

Reports have been received of sales of olives for from $115 to $165 per ton for first-class pickling stock.

A meeting of citrus growers of the Lindsay district was held last Saturday to discuss the proposition of fumigating orange groves. A citrus fair will be held in December at either Lindsay or some other town in the Tulare district.

The total fresh fruit shipments from California north of the Tehachapi up to September 20, 1913, were 9504¼ cars, as against 9165¾ cars for the same date last year.

WITH THE LIVESTOCK MEN

Frankenheimer Bros. shipped 600 head of beef cattle into Stanislaus county from the mountains during the past week.

The total amount paid by eight creameries in Kings county for the past month was approximately $130,000.

The last legislature enacted a new law cutting out the payment of fines to humane societies and does not provide any salaries or fees to anyone.

John A. Gill, of the Southern Pacific Co., is urging farmers to go into dairying and hog raising in Nevada, claiming that State is particularly well adapted for those industries.

An advance of 8c a pound for butter was marked up at Visalia during the week.

The Tulare county creameries paid out $85,000 for butter-fat received during August. This amount is about $7000 less than for the month previous.

H. B. Rackliff, a stockholder and director in the Utah Condensed Milk Co., visited Turlock last week and is considering the erection of a large condensory at that place.

The Truckee-Carson Fair will be held at Fallon, Nevada, September 29 to October 4, and promises to be very successful.

Prices of beef cattle were from 15 to 20c lower and unsteady at that point at the Portland Union Stock Yards last week. Hogs were weak and generally 15 to 20c lower. Sheep were active with prices from 25 to 50c higher. Offerings were generous in all lines.

The Jacinto Business Association will hold a poultry and dairy stock show, September 26 and 27, at Bayliss.

The Barney Mehl ranch, south of Marysville, has been sold to F. G. Scott, of Tudor, and will be run as a dairy in the future.

Two silos are being constructed on the Emerson ranch near Oakley, Contra Costa county, being the first to be erected in that vicinity.

A new world's record for a Jersey cow is claimed for Eminent Bess, a Michigan cow with a record of 18,783 lbs. of milk and 1132 lbs. of butter in a year.

Butter-fat prices at Ferndale last week were from 37½ to 37¾ cents.

A Portuguese dairyman was fined in Tulare last week for keeping an unsanitary dairy.

The Valley Floyer Co-operative Creamery filed articles of incorporation at Ferndale during the week.

Jersey Breeders Meet.

The California Jersey Breeders held their regular meeting September 17 at the State Fair Grounds. At the meeting G. O. Hillier was elected president and Ralph Watson vice-president for the coming year. J. G. Stahl, C. D. Hayworth, and W. J. Hackett were elected directors to fill the vacancies open. J. E. Thorpe and N. H. Locke were re-elected secretary and treasurer, the former being voted a suitable present for his services during the past year.

G. O. Hillier donated his herd books of the A. J. C. Club to the Association, and they, as well as future copies, will be placed in the Modesto Free Library.

A committee was appointed to confer with the State Agricultural Society asking them to enforce their rulings instead of leaving it with the exhibitors for their opinion, and also to ask to be allowed to enter the animals after arriving at the Fair Grounds. The reason for the last-named request is that accidents often occur which will not permit the cow entered a month in advance to compete.

Guy Miller addressed the meeting on the California Livestock Breeders' Association and it was voted to continue the affiliation.

A committee was appointed to work out some plan for holding a yearly futurity heifer contest and submit it to the State Agricultural Society's directors.

Several new members were admitted, giving the Association a larger membership than it has ever enjoyed.

A banquet was given on the evening of September 18, when a good feed was enjoyed and an interesting talk given by Mr. West of Oregon on the methods of breeding and dairying on the Isle of Jersey, also his experiences in importing pure-bred stock into this country.

Butter-Fat Contest.

The awards of the five days' butter-fat contest went to the following entries:

Section 643—1st, Wanda of Venadera, 10.289 lbs. of fat; 2nd, Hallita of Venadera, 8.594 lbs.; 3rd, Golden Tina, 8.259 pounds.

Section 644—1st, Loleta of Venadera, 9.255 lbs. of fat; 2nd, 3rd, and 4th, no awards.

Section 645—1st, Aldene of Venadera, 5.102 lbs. of fat; 2nd, Logrero's Regina, 5.022 lbs.; 3rd and 4th, no awards.

As all the entries were Jerseys, that breed received all of the awards.

The $400 awarded to two cows of a herd of 20 or more who had produced the highest average amount of butter-fat in any cow-testing association in California, was received by Gilbert Trigg, of Humboldt county, whose herd averaged 383 lbs. of fat.

Swine Breeders' Meeting.

During the State Fair week the Swine Breeders' Association held a meeting at the Fair Grounds, where it was voted to hold the regular annual meeting at Davis early in November.

A committee consisting of A. M. Henry, G. A. Murphy and M. Bassett was appointed to frame by-laws and provide entertainment for the coming meeting.

It was voted to assess each member winning one or more first prizes at the Fair $2, and in this way quite a little money was raised for the use of the Association. Fourteen new members were admitted and the general opinion prevailed that the new association will be successful.

New Rice Mill.

There will soon be in operation in California one of the finest and most up-to-date rice mills in the United States—at least it is so stated by a correspondent. The Chas. E. Hale Co. of San Francisco has leased the brick cannery at Biggs, Butte county, and is installing a mill which will have a capacity of 1200 bags per 24-hour run. The new mill will be called California Rice Milling Co., Inc., and will be managed by W. E. Barnard, formerly with the grain firm of Barnard & Bunker, of San Francisco, who estimates the yield of rice grown in California this year to be 250,000 bags. It is conceded by the best authorities that the Wataribune variety now grown extensively in Butte county is the best milling and food rice in the world. The mill will turn out the finished, polished product and will offer to the California housewife a rice unsurpassed for size, color, and cooking qualities. The mill will also introduce to the stock and dairy men of this State a rice meal and bran used by prominent stockmen in the Southern States.

Japanese rice is ripe on the Moulton ranch in Colusa county and harvesting has begun. It is stated that the heads are remarkably full of grain and the crop very fine and heavy. A new feature to the rice industry is the shipping of last

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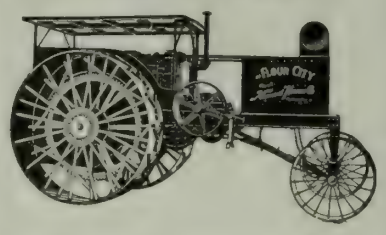

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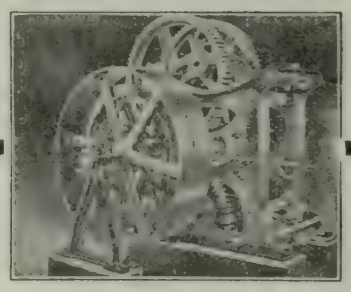

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year's rice straw to paper companies for the manufacture of paper. About 100 tons of the straw has been shipped from Richvale.

General Agriculture.

Very large crops of Egyptian corn have been harvested from Tulare lake lands this year, and profits are large.

W. S. Burdick, a Roberts Island farmer, is reported to have had great success with 30 acres of broomcorn, which is yielding nearly a ton and a quarter per acre.

A receiver has been appointed to manage the Nevada Sugar Co.'s factory at Fallon, which, owing to the small amount of beets used the last two years, has not paid expenses. The crop this year is said to be good.

All local records for high sugar content of beets at Huntington Beach, Orange county, are claimed to have been broken this year, and it is said that some growers averaged $9 per ton for all beets turned in.

Bean growers of District 70, Sutter county, have organized a warehouse company and have started construction of the building.

L. H. Day, commissioner of San Benito, is getting after the Russian thistle in his county. In Ventura, Commissioner Vaile is going as hard after Johnson grass.

Cotton growers in Imperial county have had trouble to get pickers, owing to a strike of Chinese laborers for as high wages as could be squeezed out of the growers. The Cotton Growers' Exchange has been operating to import laborers to take the places of the strikers.

Big profits from a small patch of sweet potatoes sold locally are reported by W. M. Wilcox, Strathmore, Tulare county.

What is claimed to be the largest cargo of barley sent from California left San Francisco September 20 for New York on the ship William P. Frye. The vessel carried 103,000 sacks, making 5576 tons.

The Federal Horticultural Board has decided to continue the potato quarantine against certain exporting countries where potatoes are affected with the potato wart. This will practically make the United States dependent on its own crop and that of Canada and make for high prices in short years.

The San Joaquin Valley Sugar Company has made contracts with many farmers for sugar beets next year.

A private estimate of the world's hop crop is 1,344,554 hundredweight. Prices are good, sales being made recently here from 17 to 21 cents a pound.

The E. Clemens Horst Co. is improving a tract of heavy land planted to hops at Wheatland by putting on large quantities of sand dredged from the river bed. The experiment is expensive but valuable.

Irrigation Notes.

The Cupertino Improvement Club, Santa Clara county, is pushing the proposition for the formation of a great irrigation district, the water being taken from Santa Cruz mountain streams and conducted over the valley. Under the plans the expense would be $367,000, including dam $82,000 and distributing system $225,000.

Water users of the Modesto irrigation district are organizing a permanent water users' association for the purpose of improving irrigation conditions all over the district.

Farmers of the Pacheco district, near Redding, are taking formal action to take over the plant of the Redding Electric Company and operate an irrigation district. Plans for the proposed new district in Butte county are also being rapidly developed.

Farmers on the bottom lands near Biggs, Butte county, are endeavoring to have the Feather River Canal Company put a lateral from their main canal to carry water to about 3000 acres.

Several government officials have been inspecting the proposition to take water from the headquarters of the Carson river to irrigate lands near Gardnerville and Minden.

The Sacramento river at Tehama a few days ago was 8 inches below former low-water mark.

The Merced Irrigation District campaign committee has laid out the boundaries of the proposed district in Merced county, which mill include 220,000 acres.

Hatfield, the "rain maker" is wanting to bet his chances on the weather against $3000 to $5000 of hard cash with West Side farmers.

W. O. Hamilton, president of the Imperial Irrigation District, has filed on 8000 feet of water at Laguna dam.

Through a cave-in on a tunnel in the Turlock Irrigation District two men were recently killed and several others seriously injured.

The Secretary of Agriculture has signed a permit to the Southern California Edison Company for extensive development of water power on the Kern river, Kern National Forest.

Grape News.

Deliveries of raisins have begun, though not many Muscats have yet been turned in. The Associated Raisin Company has already shipped a number of cars of Sultanas and Thompsons. The price of raisins since the actual size of the crop has been seen has been going up nicely and sales have been numerous. A single sale of 2000 tons to Rosenberg Bros. was made and a large number of other sales also. The Eastern market has been as good as the California market. L. R. Payne, formerly of the Fresno Home Packing Company, has resigned to become manager of the manufacturing department of the company. The stock of the Associated has been selling better to growers than for some time.

Wineries are said to be offering $12 per ton for second crop Muscats. Wine grapes in the raisin district are bringing $11, with an upward tendency and some sales at $12.

It is stated that $40 and $42 has been offered for Emperors at Fresno. Malaga prices have failed since Tokays reached the market.

Miscellaneous News Items.

The Tulare County Beemen's Association is to sell two cars of honey now and hold another car for a hoped for rise in price.

The Stanislaus Poultry Association is beginning a campaign for membership in preparation for the show to be held in November.

A news item from Butte county states that a Sacramento concern will shuck a large quantity of corn for the husks, which are used in tamale making.

Russian farmers have purchased a second large farm near Klamath Falls, Oregon, in the United States irrigation project.

Up to the middle of September the Forest Service reported that less damage had been done to forests by fires than had ever been recorded and the fire season was practically at an end.

The Massachusetts Experiment Station, Amherst, announces that it has published a complete bulletin on greenhouse structure and practices, which may be had on application of interested persons.

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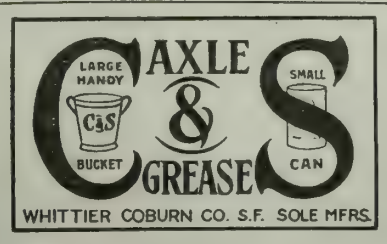
WRITE FOR PRICE LIST
UNITED FRUIT CO.
NEWCASTLE, CAL.



Make your plants and trees work 24 hours a day for you

RAISING alfalfa, a farmer in Sonoma County found that it was impossible to get a good stand. There was plenty of water. The soil seemed to be of fine rich quality. Yet the results were poor. He tried a fertilizer. Still no results.

His next stop was to write a letter to us setting forth his troubles explicitly. From his description our Service Department in the charge of P. L. McCreary, who was for five years chemist in the fertilizer department at the California Experiment Station and for three years previous to that, engaged in soil and water work for the United States Reclamation Service, readily determined the source of the trouble.

It was a lack of lime—producing a sour condition of the soil and making proper growth impossible. As soon as the PROPER FERTILIZER TREATMENT was prescribed, a normal crop production followed.

If your plants and trees are forced to exhaust their energies in extracting the insoluble plant foods of the soil, you can't get a maximum income—maximum crops.

Let your plants work 24 hours a day and every minute of the time devoted to reproduction—not fighting for nourishment from the soil. The PROPER fertilizer will enable them to do it.

Tell us your crop troubles and we will help you solve them. Our Service Department was created with that sole purpose in view and you are at liberty to call upon us at any time without incurring any obligation on your part.

We have just issued a book, "The Care and Feeding of Crops" which deals comprehensively with fertilization and fertilizers. We will be glad to send you this book without any cost to you and it may mean a saving of thousands of dollars in actual profits from your farm. Write today.

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With the land owner the important question arises: "What can I plant that will surely be in greatest demand and from which I can make the most money?" The true answer is:

The Franquette Walnut, Peer of Them All

37,815,000 pounds of unshelled nuts imported into the U. S. in one year. Is this sufficient evidence of demand? How about returns from nuts? 22 to 25c per pound wholesale, and eagerly bought up. How about over-production? It never will be. Why? Because the English walnut can only be grown in a limited section on the Pacific coast. How about expense? Practically none. No spraying, little or no pruning. Nuts are gathereed from the ground when they fall, and dried in the sun or on racks in sheds. How many trees per acre? 27 set 40 feet apart each way. Room for other crops between trees until they require the full ground space. How long do I have to wait for returns? Our fine four-year-old 5 to 7-foot trees will begin bearing first to second year after setting, increasing each year thereafter. In three to four years should net over $200.00 per acre and when ten to twelve years of age will more than double this income. What is their limit in bearing? None known. Some trees in France over 100 years old bearing heavily. These trees may be set in corners and all waste spaces. They are beautiful for garden, lawn and street planting, combining beauty, shade and handsome returns in nuts. They are late bloomers, escaping late frosts in spring and are blight, insect and disease proof. They produce the largest and finest nuts of any English walnut varieties known, as well as more meat per pound of nuts and of highest flavor.

Mr. Landowner, your question has been answered. We believe you're interested. We have the trees and will ship free of freight charges, guaranteeing every tree true to name. Plant this season. Get started in the biggest and safest money making business your land can possibly produce.

These valuable trees are offered at but $1.00 each straight.

Salem Nursery Company, Salem, Oregon

Attention ALFALFA Growers.
Write for booklet giving testimonials from growers who increased their crops of alfalfa wonderfully by using

SUPERPHOSPHATE
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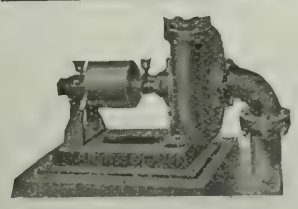
Nearly new "Superior" Grain Drill for sale at Hickman, Stanislaus County



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PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

New Treatment for Contagious Abortion.

A new hope for the control of this serious dairy evil is based upon the publication of the Vermont Experimental Station of experiments indicating that the use of a perfectly harmless medicine, which is already used in human medication for other purposes, may prove thoroughly effective in ridding the system of the cow of the germ which is known to be the active agency in the loss of calves.

F. A. Rich, veterinarian of that station publishes in Bulletin 174 (which can be had by application to the station at Burlington, Vt.) a full account of his researches and experiments which justify the following statements:

Methylene blue is a well known, though not widely used, antiseptic. Its penetrability and activity have long been recognized in bacterioligical laboratories. Its use as an internal antiseptic in human medicine is thoroughly established. The highest purity medicinal grade is best adapted to internal use, since it is guaranteed to be free from zinc and arsenic and only this medicinal grade should be used. Do not confound with methyl blue which is an utterly different thing.

The application of methylene blue in the laboratory in the destruction of the abortion organism and the rapidity and completeness with which is deadly work is accomplished may be seen from the laboratory note books.

After determining the specific bactericidal effect of methylene blue upon the abortion organism in the laboratory, the writer tried divers experiments with the chemical upon different cows in the Experiment farm herd, and to determine the proper dose of the medicine and the best way to administer it.

The powder was fed in the grain, and upon the silage, and saline solutions thereof were injected under the skin, into the gravid uterus and into the jugular vein. It has been fed in small doses and in mammoth doses, fed occasionally, intermittently, constantly, fed to cows that reacted to the special test and to those which did not, fed to young and to old, to sick and to well, to cows of all breeds and of no breed, to calves, bulls, steers, to human beings. No ill effects whatever have followed the use even of several times the necessary amount contained beyond the necessary length of time.

1. How does methylene blue do its work? A portion of the dose is absorbed by the blood, appearing therein within 30 minutes. The blood thus laden with the antiseptic chemical is pumped to every organ and tissue in the body for purposes of nourishment, warmth, secretion and excretion; and incidentally and abortion organisms existing in the blood or other tissues of the body are almost of necessity overtaken by the bactericidal substance and destroyed.

It destroys the abortion organisms in the digestive tract, a most important consideration, because it is now believed that the digestive tract is the principal avenue of infection. Even the unabsorbed portion of the chemical thus performs a valuable service in the intestinal tract and likewise in the trench of the infected stable.

2. What becomes of it? The absorbed portion is principally excreted by the kidneys and is discharged from the body in the urine. On this account and because of its pronounced antiseptic properties, it has been extensively employed in both man and domesticated animals, to overcome infection of the urinary tract.

While in the opinion of the writer, the vulva is not the principal avenue of infection of cows with the abortion organism, the infection doubtless does obtain by this route in some cases, against which, the excreted methylene blue must exert a distinct preventive influence. Thus it would seem to serve to a considerable extent the purpose of antiseptic vaginal injections so extensively employed in combatting infectious abortion. The manure is colored by the unabsorbed portion of the methylene blue which, of course, stains the contents of the several stomachs and intestines.

A distinct blue is only noted in the urine from 2 to 6 hours after extreme doses of methylene blue have been given. Ordinary amounts color the urine green.

When 20 grams (⅔ oz.) are administered daily for 7 days, within 14 hours from the first dosage the methylene blue content of the blood exceeds the effective strength of the fluid which in the laboratory tests was found sufficient to kill the abortion organism.

3. How is it administered? During early trials it was mixed with either the grain or silage ration. During later trials it was given in capsules introduced into the throat with a balling gun. This is the preferable way of administering the remedy as the exact amount given can easily be controlled and all chances of loss in manger and through refusal to eat the food are eliminated.

4. What cows should be dosed? Reacters should certainly receive the treatment, but in our judgment, as has already been stated, it is often well to treat the entire herd wherein abortion has occurred or is occurring. The added expense seems to be the only reason for omitting any animals that have been exposed to infection.

5. How much is given and how often? The opinion of the writer to date is that the treatment should begin early in pregnancy; that 10 to 15 gram (⅓ to ½ oz.) doses (in capsules) should be given night and morning for 7 days, and that after a 4 weeks' interval the treatment should be repeated for another 7 days and continued at 4 week intervals during the period of gestation.

6. What is the cost? Where obtained? The approximate cost of the methylene blue (medicinal) is $2.50 per pound. Each gram costs about a half cent making the daily dosage to cost about 10 cents and each week's treatment cost about 70 cents per cow. The material can be obtained of wholesale druggists. The medicinal, not the commercial grade, should be used.

CONSERVATION VIEW OF NOVELTIES

Prof. O. M. Morris of the Washington State College in a recent address before the Pacific Coast Nurserymen's Association, said this :

Scion Orchards.—I would like to suggest that many nurserymen in the Northwest might improve their methods of business by establishing scion orchards. I know there are plenty of people who criticise scion orchards, but nevertheless, there are plenty of fine orchards now fruiting that have been propagated from scion orchards, and I am firmly convinced that many nurserymen will make fewer mistakes by propagating from scion orchards than from trees located in various parts of the neighborhood or country in which their nursery is located. There is too great a possibility of scion wood becoming mixed in collecting and handling, and very frequently the trees from which the material is taken are mistaken for certain varieties which they are not .

The Commercial Motive.—Nurserymen have great opportunities to become acquainted with new varieties, and I have yet the first line nurseryman to meet who was not always interested in the history and genuine worth of any new variety of fruit, ornamental shrub or tree that came in his line of business. On the other hand, some nurserymen have been indiscreet in urging too general trial of new varieties. For the home orchard a large list of varieties makes for the pleasure derived from the orchard, but it, in no sense can be justified in a commercial plantation. New varieties of genuine merit are rare and when they are found and well prove nout ,any nurseryman is justified in using all legitimate means in his power to make money out of them and to secure their wide planting. I have no criticism against men who are searching constantly for new things, but I do believe that many people are over enthusiastic about what they should reasonably expect in finding new varieties to be placed on the market.

The Breeding Process.—The breeding of fruit is a very slow and tedious process and one that is very seldom worth while. Most of our good varieties have been discovered and it is altogether probable that such will continue to be the history of new tree fruits for a good many years. Just at present there is a popular wave of enthusiasm about plant breeding, and it is inevitable that some people will become over enthusiastic. Some will make capital out of the popular notion and carry to an unreasonable extreme, the advocacy of development work along this line. This popular clamor for the discovery of something new, I believe to be largely responsible for the extremes to which people have gone in their claims and statements of results obtained in the use of pedigreed stock. The term pedigree does not deceive many people, nor do I believe that it is intended to deceive directly. Generally people understand clearly what that term is intended to convey when used in connection with nursery stock, and it is used ordinarily only because a more definite term does not seem to be available. There is something, no doubt, of merit in pedigreed nursery stock. If I were planting an orchard of my own and could obtain scions from trees of certain characteristics of health, vigor, fruitage and disease resistance, I would certainly be willing and glad to exert myself to obtain wood from such trees for propagation, but I would not expect that each tree propagated would be an exact copy of the parent. The mere fact that the trees vary so that I would pick out individuals to propagate from, is the best evidence I can think of that would convince me that all individuals propagated from such trees would be variable within varying limits and not exact individual patterns of the parents.

FOOT AND MOUTH QUARANTINE.

To the Editor: I notice an article in your paper in regard to sheep having been recently imported from England. May goats be imported now as well as sheep? I understand the United States had quarantine regulations forbidding such importations until the foot and mouth disease was eradicated in Europe.—E. L. S., Varain.

Answer by Dr. H. H. Hicks, Inspector in Charge, Bureau of Animal Industry.

Replying to yours of current date, you are informed that no ruminants are permitted to be imported from Continental Europe on account of foot and mouth disease. I believe they may be imported from Great Britain, Ireland and the Channel Islands, provided a permit is obtained from the Secretary of Agriculture prior to their being shipped from there. There are but very few places at present outside of North America from which ruminants may be shipped into this country.

PACIFIC LIVESTOCK EXPOSITION.

The preliminary classification for the third annual show, Pacific International Livestock Exposition, to be held at the Union Stock Yards, Portland, Oregon, has been issued and will be mailed to any address on application to O. M. Plummer, Manager, Stock Yards, Portland. The premiums will amount to approximately $15,000. The show will be held December 8 to 13, 1913.

In the fat and dairy breeds regular premiums amount to $6125, besides $850 in special premiums and $300 worth of cups. In the fat classes of cattle, regular premiums amount to $2145, besides $200 in special premiums. Breeding sheep, $1480 regular premiums, $45 special premiums. Fat sheep, $739 regular premiums. Breeding hogs, $1392 regular premiums, $150 special premiums and $50 cup. Fat hogs, $805 regular premiums. Students' judging contest, $200, open to the agricultural colleges of the country.

HUMUS AND ITS MAKING.

To the Editor: Please state what weight of humus in pounds will be added to soil for each ton (dry weight) of vetch, or other similar crop, plowed under.

Will such vegetable matter be completely humi-

fied in one season if turned under about the time of the first rains?

Does vegetable matter become humified more readily if turned under in the green state, rather than the dry?

Finally, where soil is neutral—no surplus alkaline properties—is there danger of rendering such soil acid by annually turning under a green manure crop?

In a soil of neutral character, is there likely to be marked benefit from the application of ground limestone, and if so, at what rate per acre?—Rancher, Grass Valley.

Answer by Prof. C. B. Lipman.

Answering the foregoing, I may say that thus far we have carried out one experiment on the amounts of humus produced from green manures, and we find that about half of the dry weight of the clover material, which was used in our experiments, was transformed into humus, as determined by the Hilgard method.

We find that in a season of about six months, with sufficient moisture in the soil, all organic matter added to the soil is humified or oxodized, so that no recognizable cell tissue remains behind. Most of it is transformed into humus in three months, and more than half of it in six weeks.

Vegetable matter is more readily changed to humus when turned over into the soil in the green state than when plowed under dry: at least the very scant experimental data which we have on this subject to date justifies us in making that statement.

There is a slight danger of rendering soil which is neutral in reaction, acid by repeated green manuring. In any case, soil should be kept in a slightly alkaline condition by the addition of lime, and, especially where green manuring is practiced, the use of one to two tons of lime to the acre once in five or six years on neutral soil will be necessary for good cropping.

In a soil of neutral character, decided benefit in total yield of crops may be obtained by the application of ground limestone at the rate of one to two tons to the acre. Such applications do not always manifest the benefit accruing from them by the outward appearance of the crop, but the total weight and nitrogen content are always affected by the application of lime. Unless a soil under such conditions is well supplied with organic matter, a very finely ground limestone should be employed.

University of California, Berkeley.

OCCURRENCE OF BLIGHT UPON "IMMUNE" WALNUTS.

To the Editor: During the present season a common condition has come to light in several instances wherein walnuts of some of the supposedly most blight-immune varieties have shown a considerable prevalence of the disease upon the green nuts. This has occurred invariably in rather dry places or light soils, and especially upon top grafts worked on English or black walnut trees. In older trees or grafts of the same varieties, and also in all trees upon fairly heavy and well irrigated soil, no such occurrence of blight has taken place.

Growers need not feel alarmed or disappointed over this occurrence of blight on several of our most promising varieties. It is a well known fact that upon thrifty young trees, and especially upon top grafts on old trees, the nuts are more susceptible to blight and most other diseases than they are upon older trees. The present instance seems to be a case where the nuts being upon very thrifty vigorous growth have made a soft, succulent development very susceptible to the disease. Lack of moisture during the present dry season, especially where no irrigation is practised, has then checked the growth of such trees and made them still less resistant to the disease.

This, we feel sure, is simply a temporary condition, and there is no reason to change our estimate of any of the walnut varieties on account of this occurrence. It is, however, an added argument in favor of fairly heavy soil and plenty of irrigation for walnut culture.

RALPH E. SMITH.

University of California, Berkeley.

A Review of the 1913 State Fair

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

For 60 years California has been annually holding State Fairs, and the one just finished speaks more highly than mere words of the progress that has been made in the State since the first one was held.

It may seem a rather antique phrase to say that it was bigger and better than ever, but that is the way some 120,000 visitors expressed their opinion. As in former years, the agricultural part was the larger and more interesting. The county exhibits were much larger in numbers than those of last year and the floor space in the Agricultural hall and Annex was practically all taken up by the different counties. Solano county took first honors for the best county exhibit and Fresno second. Many unique ideas were worked out in decorating the different county booths and much credit is due the enterprising exhibitors.

Farm machinery of every kind was shown in large quantity and daily demonstrations were made by the different concerns, showing their wares in actual operation. In this department this year's Fair brought out many exhibitors who have not heretofore attended, and he who was interested in farm machinery had ample opportunity of acquiring more knowledge along this line than could be gained at any other time or place in the State.

Horses.—Perhaps the most gratifying improvement at the Fair was the increase in quantity and quality of live stock shown in most divisions.

The Percheron horse entries were larger this year than last and everyone realized that with such large classes the winners had to be good individuals. A noticeable feature of the entries in this breed were the large number of home breeders and the small number of importers as compared with last year's show, and while there is still need of improvement in the quality, it was demonstrated that California can in time be the home of high class draft horse breeders.

In his remarks on the Shire classes, the judge said that the animals exhibited were a credit to the West and that they were good enough to receive recognition at any of the larger Eastern shows. The quality among the Shires was perhaps the best of any breed shown, and the exhibitors may well be congratulated. The Belgian entries were not as large as either of the above breeds, but showed good judgment in selection, and also that the breed should receive more consideration in the future.

In the grade drafters, large classes of high quality was very evident and the strong competition brought out many outstanding individuals.

Beef Cattle.—The Short-horn show this year was lacking in quantity, but the quality and good judgment in fitting was very evident. That the breed is being improved was seen in the bull, Hillcrest Knight, who won the junior championship and ran his sire, Greenwood Knight, a hard race for grand championship.

The Hereford classes were well filled with high-class individuals this year and brought out competition from Oregon. The bull Hopeful Prince won the junior championship, while the grand championship went to Young Donald. Both of these were exceptionally good individuals and were deserving of the honors they received. Judging by the showing made, California Herefords are of a high standard and are receiving more recognition.

In size and quality the Red Polled showing this year was greatly superior to that of previous years, and although the majority of prizes went outside of this State, a lack of proper fitting was very evident in our home-grown animals, due to a large extent, it was said, to the dry year.

More Angus stock was badly needed this year to make the showing of that breed interesting.

The fat steer showing was of exceptional good quality and showed what may be expected by keeping well-bred stock.

John T. Caine, of Logan, Utah, judged the beef cattle, and remarks that the State may well be pround of the quality of her stock, which would, he thinks, rank as high as that of older breeders in the Middle West.

Dairy Breeds.—No other division in the live stock department showed larger gains in size and quality than the dairy cattle, and Prof. O. E. Reed, of Kansas, was justified in saying that the display was really remarkable, considering that the breeding of purebred dairy cattle is comparatively new in this State.

The showing of Jerseys and Guernseys were the largest ever made in the State, and the Holstein classes, while about the same size as that of last year, showed more class than ever, in fact, the judge stated that nowhere had he seen a better Holstein showing west of New York. In the Holstein championships, the bull Lorena Korndyke took grand and senior championships over a large list and showed that as an outstanding individual he is hard to beat.

The grand champion cow, Inka Tritomia, is a remarkable individual and was deserving of the first prize, but the grand old cow, Riverside Sadie De Kol Burke was not in condition to show at her best, otherwise the results might have been different.

The two bulls, Altoma Interest and King Valet Imp., ran a close race for grand championship in the Jersey division, and while the former received the award, the judge stated that King Valet Imp. was one of the best breeding bulls he had ever seen. The bull Owl of Belleview was awarded junior championship, the cow Golden Leda of S. B. was senior and grand champion cow, and Valet's Handsome Semole of Lockeford junior champion.

An outstanding individual in the Guernseys was Raymond 8th's Desire, awarded junior and grand championship in the female class.

The Dutch Belted classes contained two of the best individuals of that breed in America, having won high honors at the International in Chicago last year.

The five-day butter-fat contest was short of entries this year, due to a misunderstanding, and as a consequence only Jerseys were entered. However, considerable interest was taken by visitors interested in the production of dairy animals.

Swine.—While the swine showing was no larger than that of last year, the quality was, generally speaking, superior, and a noticeable feature was that over-fitting was not generally practiced. T. F. McConnell, of Morgan Hill, did the swine judging and stated that he had never seen a better collection than the one this year and that many of those shown were the best individuals he had ever seen.

Artful Masterpiece was awarded grand championship in the Berkshire boar division, H's Big Bone was grand champion boar among the Poland-Chinas, Colonel's Advancer grand champion in the Duroc classes, El Capitan grand champion in the O. I. C., Berkeley King grand champion in Hampshires, and the Lockhaven stock took all prizes in the Yorkshire classes, being the only swine of the breed exhibited.

Judging by the sales made among exhibitors, the hog entries next year will be much larger.

Sheep.—The sheep and goat divisions were of exceptionally fine quality this year, the first named containing some individuals that were said to be the finest ever shown in the West, but a noticeable fault was the small number of exhibitors. With the number of breeders of high-class sheep that this State boasts of, the sheep division should be much better filled, and it would seem that unless a renewed interest is taken visitors will be disappointed in the numbers shown in the future. The Boy's Stock Judging Contest held this year was a new feature and provided a great educational opportunity for the contenders. Rare good judgment was shown by several of the entrants, and this feature should be continued in future years.

Undoubtedly this year's showing of live stock was superior to that of former years, and the only reason it was not much larger was on account of the dry year.

A misunderstanding existed among Holstein breeders regarding the base date as to ages, otherwise more individuals would have been entered,

and this mistake of the directors should be corrected next year.

The judging of all classes of live stock was satisfactory to most breeders, and those who officiated should receive much credit.

In this respect the principal complaint seems to be that the judges are not selected early enough, and it has been suggested that early selections would greatly aid breeders in fitting their stock.

Many interesting remarks were made by the judges after selecting their choices and the following awards were made:

SHORT-HORN CATTLE.

T. S. Glide—Senior and junior champion bull; senior and junior champion cow; 1st bull 3 yrs. old and over; 1st bull senior yearling; 1st, 2nd and 3rd junior yearling bulls; 1st and 3rd senior calf; 1st and 3rd cows 2 yrs. and under 3; 1st and 2nd junior yearling; 1st aged herd; 1st get of sire, two animals either sex; 1st and 2nd produce of one cow.

Pacheco Cattle Co.—1st bull 2 yrs. and under 3; 1st junior bull calf; 2nd cows 2 yrs. and under 3; 2nd senior calf.

G. A. Murphy—1st cow 2 yrs. old and under 3.

H. L. Murphy—4th senior bull calf.

J. H. Glide—2nd senior bull calf.

HEREFORD CATTLE.

Simon Newman Co.—Senior champion bull; grand champion bull; junior champion cow; 1st bull 3 yrs. old and over; 2nd junior yearling bull; 2nd cow 3 yrs. old and over; 1st cow 2 yrs. and under 3; 1st senior and junior yearling; 2nd junior calf; 1st aged herd; 2nd get of one sire; 1st two animals either sex produce of one cow.

University of California—Junior champion bull; 1st junior calf.

George Chandler—Senior and grand champion cow; 2nd bull 3 yrs. and over; 1st bull 2 yrs. and under 3; 1st senior yearling bull; 1st junior yearling bull; 1st senior bull calf; 2nd junior calf; 1st cow 3 yrs. and over; 2nd cow 2 yrs. and under 3; 2nd and 3rd junior yearling; 1st senior calf; 1st junior calf; 2nd aged herd; 1st breeder's young herd; 1st calf herd; 1st get of one sire; 2nd two animals either sex produce of one cow.

RED POLLED CATTLE.

R. Cartwright—2nd bull 3 yrs. or over; 2nd bull 2 yrs. and under 3; 1st junior yearling bull; 2nd cow 3 yrs. and over; 2nd junior yearling; 2nd and 3rd senior calf; 3rd aged herd.

F. H. Porter—1st bull 3 yrs. and over; 1st senior calf; 1st and 2nd junior calf; 1st cow 3 yrs. and over; 1st and 2nd cow 2 yrs. and under 3; 1st and 2nd senior yearling; 1st junior yearling; 1st senior calf; 1st junior calf; 1st aged herd; 1st breeder's young herd; 1st calf herd; 1st and 2nd get of one sire; 1st and 2nd produce of one cow; junior, senior and grand champion bull; grand junior and senior champion cow.

ABERDEEN ANGUS.

University of California—Only exhibitor and all awards.

HOLSTEIN-FRIESIAN CATTLE.

A. W. Morris & Sons—Bulls: grand, junior and senior champion; 1st 3 yrs. old and over; 1st 2 yrs. old and under 3; 2nd senior yearling; 1st, 2nd and 3rd junior yearling; 2nd and 3rd senior calf; 4th junior calf. Cows: junior champion; 2nd 4 yrs. old and over; 4th 3 yrs. and under 4; 1st and 4th 2 yrs. and under 3; 2nd, 3rd and 4th senior yearling; 1st, 2nd and 3rd junior yearling; 1st, 2nd, 3rd and 4th senior calf; 1st and 2nd junior calf; 1st aged herd; 1st and 2nd breeder's young herd; 1st and 3rd calf herd; 1st and 2nd get of one sire 4 animals any age or sex; 1st and 2nd produce of one dam, 2 animals of any age or sex.

Stanford University—Bulls: 2nd 3 yrs. and over; 3rd 2 yrs. and under 3; 4th junior yearling; 2nd junior calves. Cows: 3rd and 4th 4 yrs. and over; 3rd 2 yrs. and under 3; 3rd aged herd; 2nd calf herd; 3rd get of one sire 4 animals.

Dr. E. J. Weldon—Bulls: 4th junior calf; 3rd senior yearling.

James McGillivray—Bulls: 1st senior yearling; 4th senior calf. Cows: grand champion; 1st 4 yrs. old and over; 3rd 3 yrs. and under 4; 2nd 2 yrs. and under 3; 4th junior yearling.

H. E. Cornwell—Cows: 1st and 2nd 3 yrs. and under 4; 1st senior yearling; 4th get of one sire 4 animals.

Pure Gold Stock Farm—Bull: 2nd 2 yrs. and under 3; 1st senior calves.

University of California—Bulls: 1st and 3rd junior calf. Cows: 3rd junior calf.

C. E. McDonald—1st senior yearling.

JERSEY CATTLE.

N. H. Locke Co.—Bulls: 1st 3 yrs. or over; 2nd, 3rd and 4th 2 yrs. and under 3; 2nd and 3rd senior yearling; 3rd and 4th junior yearlings; 1st and 4th senior calf; 3rd and 4th junior calf. Cows: grand, senior and junior champion; 1st and 2nd 4 yrs. old and over; 1st and 2nd 3 yrs. and under 4; 2nd 2 yrs. and under 3; 1st, 2nd and 3rd senior yearling; 1st and 2nd junior yearling; 1st, 2nd and 3rd senior calf; 1st and 3rd junior calf; 1st aged herd; 1st young herd; 1st herd of one bull and 4 heifers bred and owned by exhibitor under 12 months; 1st and 2nd get of one sire, 4 animals any age or sex; 1st and 2nd produce of one dam, 2 animals any age or sex; A. J. C. C. premium breeder's young herd.

G. O. Hillier—Bulls: 1st 3 yrs. and over. Cows: 3rd 2 yrs. and under 3; 3rd aged herd.

W. J. Hackett—Bulls: 3rd 3 yrs. or over. Cows: 4th 4 yrs. or over; 3rd 3 yrs. and under 4; 4th 2 yrs. and under 3; 4th senior yearlings; 4th junior calf; 2nd aged herd.

R. Watson—Bulls: 2nd junior yearling; 1st junior calf. Cows: 4th junior yearling; 3rd herd of 1 bull and 4 heifers under 1 year.

J. E. and J. B. Thorpe—Bulls: 3rd senior calf. Cows: 4th 3 yrs. and under 4; 1st 2 yrs. and under 3; 2nd junior calf; 3rd two animals, any age or sex, produce of one dam; 3rd A. J. C. C. premium breeder's young herd.

Fred B. Wulff—Junior champion bull; 1st senior yearling.

W. J. O'Brien—3rd junior calf.

W. Fisk—1st junior yearling bull.

Guy Miller—Bulls: senior and grand champion; 1st 2 yrs. and under 3. Cows: 3rd junior yearling; 4th senior calf; 2nd young herd; 2nd herd of 1 bull and 4 heifers under 1 yr. bred by exhibitor; 4th get of one sire, 4 animals; A. J. C. C. premium for cow with best record and conformation; 2nd A. J. C. C. premium for breeder's young herd.

E. L. Turner—3rd cow 4 yrs. or over.

GUERNSEY CATTLE.

Dr. Henderson—Bulls: 2nd, 3rd and 4th junior yearling. Cows: 3rd 3 yrs. and under 4; 4th junior yearling; 1st senior calf; 2nd produce of dam, 2 animals any age or sex.

A. B. Humphrey—Bulls: 2nd 3 yrs. and under 4; 2nd senior yearling; 2nd senior calf; 2nd junior calf. Cows: 1st 4 yrs. and over; 2nd 3 yrs. and under 4; 2nd 2 yrs. and under 3; 3rd senior yearling; 1st junior yearling; 2nd senior calf; 3rd junior calf; 2nd aged herd.

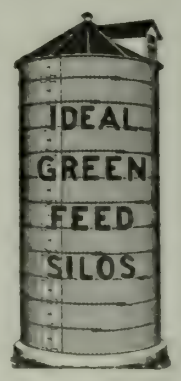
Ed. Johnson—1st junior yearling bull.

W. M. Leland—Bull: senior and grand champion; 1st 3 yrs. and over 4; 1st and 3rd 2 yrs. and under 3.

Chas. G. Lathrop—Bulls: junior champion; 2nd 2 yrs. and under 3; 1st senior yearling; 1st senior calf; 1st and 4th junior calf. Cows: junior and grand champion; 2nd 4 yrs. and over; 1st and 4th 3 yrs. and under 4; 1st and 3rd 2

WHAT DOES A SILO COST?

EXPERIENCED DAIRY FARMERS CLAIM THAT A GOOD SILO WILL PAY FOR ITSELF THE FIRST YEAR. THAT BEING THE CASE IT COSTS NOTHING.



As a matter of fact, if you are keeping dairy cows or raising stock for the market there is no investment which you could make which will pay you better returns than an **IDEAL GREEN FEED SILO.**

The cost is a secondary consideration and it is not a question of whether you can afford to erect a silo this year, but rather whether you can afford to be without one another winter.

A good silo is a necessary part of the dairy equipment of every cow owner who wants to realize a profit from his herd.

If you have no silo, a little investigation will be sure to convince you that you ought to purchase one right away.

Don't buy anything but a wood silo. Cement, or stone, or brick not only cost a great deal more than wood in the first place, but there is too much waste in the spoiled silage with anything but a wood silo. Our silo book explains why so much better results can be obtained with a wood silo in our coast climate than with any other kinds.

The gold medal was awarded to the Ideal Green Feed Silo at the California State Fair, Sacramento.

Be sure and get our free silo book.

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"HILLCREST LAD"
First Prize Ram at State Fair, 1911

Breeder of

Short-Horn Cattle, Shropshire and Merino Sheep

Am sold out of yearling Shropshires, but can furnish fine Shropshire Ram Lambs sired by Rams imported from England.

HOLSTEIN-FRIESIAN BULLS

BRED FOR YEARLY PRODUCTION

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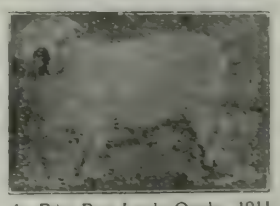
Two of our herd bulls are from 28,000-lb. dams with butter records of 1085 and 1142 lbs. We have fifty cows on yearly test. The first eight junior 2-year-old heifers to finish average 471 lbs. fat (588 lbs. butter, 80% basis). Ten cows have finished, including two 3-year-olds and three 4-year-olds, with an average over 700 lbs. fat (875 lbs. butter). Fifteen cows have averaged 651 lbs. fat (813 lbs. butter). Estimate the value of a bull in your herd backed by such production. Place your order now, as they are going fast. Write for information and prices.

A. W. MORRIS & SONS, Woodland, Cal.



1st Prize Ram Lamb, Omaha, 1911

San Ramon Shropshire Flock.

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.

INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

yrs. and under 3; 1st and 2nd senior yearling; 2nd and 3rd junior yearling; 3rd and 4th senior calf; 1st and 2nd junior calf; senior champion; 1st aged herd; 1st breeder's young herd; 1st calf herd; 1st get of sire; 1st produce of dam.

DUTCH BELTED CATTLE.

Mrs. Strader and U. G. Strader—Received all awards.

BERKSHIRE SWINE.

Oak Grove Dairy Farm—Boars: champion; 1st 2 yrs. and over; 1st 18 mos. and under 2 yrs.; 5th under 6 mos. Sows: 3rd 2 yrs. and over; 3rd, 4th and 5th 18 mos. and under 2 yrs.; 4th and 5th under 6 mos.; 2nd boar and 3 sows.

A. B. Humphrey—Boars: 5th 2 yrs. and over; 1st under 18 mos.; 2nd under 1 yr.; 1st and 2nd under 6 mos. Sows: 1st and 2nd over 2 yrs.; 1st and 2nd 1 yr. and under 18 mos.; 2nd and 3rd under 1 yr.; 3rd under 6 mos.; 1st boar and 3 sows over 1 yr.; 1st boar and 3 sows under 3 yrs.; 1st boar and 3 sows bred by exhibitor; 1st boar and 3 sows under 1 yr. bred by exhibitor; 1st 4 swine get of some sire bred by exhibitor; 1st 4 pigs, any age, produce of sow; 2nd fat barrow any age.

H. L. Murphy—Boas: 3rd 2 yrs. and over. Sows: 1st and 2nd under 18 mos.; 1st and 2nd under 6 mos.; 2nd boar and 3 sows under 1 yr.; 2nd boar and 3 sows under 6 mos.; 2nd 4 swine get of sire; 2nd produce of sow 4 pigs; champion sow any age; champion sow any age bred by exhibitor.

G. A. Murphy—Boars: 2nd 2 yrs. old and over; 2nd under 18 mos.; 3rd under 1 yr. Sows: 4th and 5th 2 yrs. and over; 4th under 1 yr.; 3rd boar and 3 sows over 1 yr.; 3rd boar and 3 sows under 1 yr.; 1st fat barrow any age.

Calla Grove Farm—Boars: 1st under 1 yr. Sows: 1st under 6 mos.; champion boar, any age, bred by exhibitor.

Brae Bourne Ranch—4th boar 2 yrs. and over.

POLAND-CHINA SWINE.

A. M. Henry—Boars: champion boar, any age; 1st 2 yrs. and over; 2nd 1 yr. and under 2; 2nd boar under 6 mos. Sows: 2nd 2 yrs. and over; 2nd under 18 mos.; 2nd boar and 3 sows over 1 yr.; 1st 4 head get of some sire bred by exhibitor.

M. Bassett—Boars: champion, any age, bred by exhibitor; 3rd over 2 yrs.; 1st 18 mos. and under 2 yrs.; 1st and 2nd 6 mos. and under 1 yr.; 3rd, 4th and 5th under 6 mos. Sows: champion, any age; 1st, 4th and 5th 2 yrs. and over; 1st and 2nd 18 mos. and under 2 yrs.; 1st under 18 mos.; 1st, 2nd, 3rd and 4th under 6 mos.; 1st boar and 3 sows over 1 yr.; 1st and 3rd boar and 3 sows under 1 yr.; 1st boar and 3 sows over 1 yr. bred by exhibitor; 1st and 3rd boar and 3 sows under 1 yr. bred by exhibitor; 2nd 4 swine get of some sire; 2nd 4 pigs produce of 1 sow; 1st and 2nd any age; 2nd fat barrow; 1st pen of 3 barrows.

W. A. Young—Boars: 2nd over 2 yrs. 3rd under 18 mos. Sows: 1st under 1 yr.; 1st under 6 mos.; 2nd boar and 3 sows under 1 yr.; 2nd boar and 3 sows under 1 yr. bred by exhibitor.

Mrs. P. H. Murphy—Boars: 5th over 2 yrs.; 4th and 5th under 18 mos.; 3rd, 4th and 5th 6 mos. and under 1 year.

W. H. Browning—3rd boar and 3 sows over 1 yer.

DUROC-JERSEY SWINE.

John P. Daggs—Boars: 1st 2 yrs. and over; 4th 6 mos. and under 1 yr. Sows: 1st and 2nd 1 yr. and under 18 mos.; 2nd and 4th 6 mos. and under 1 yr.; 1st boar and 3 sows over 1 yr.; 2nd boar and 3 sows under 1 yr.; 1st boar and 3 sows over 1 yr. bred by exhibitor; 2nd boar and 3 sows under 1 yr. bred by exhibitor; 2nd 4 pigs produce of 1 sow bred by exhibitor; 1st barrow any age; 2nd 3 barrows any age.

J. K. Fraser—Boars: 1st 1 yr. and under 18 mos.; 1st and 3rd 6 mos. and under 1 yr.; 2nd and 3rd under 6 mos. Sows: 1st and 4th 2 yrs. and over; 4th 1 yr. and under 18 mos.; 3rd 6 mos. and under 1 yr.; 3rd under 6 mos.; 2nd boar and 3 sows over 1 yr.; 3rd boar and 3 sows under 1 yr.; 3rd boar and 3 sows under 1 yr. bred by exhibitor; 2nd barrow any age; 1st pen of 3 barrows any age; 1st barrow under 1 yr.; 1st pen of 3 barrows under 1 year.

J. E. and J. B. Thorpe—Boars: 2nd 2 yrs. and over; 2nd 18 mos. and under 2 yrs.; 4th 1 yr. and under 18 mos.; 5th 6 mos. and under 1 yr. Sows: 2nd 2 yrs. and over; 2nd 18 mos. and under 2 yrs.; 3rd boar and 3 sows over 1 year.

Ed. E. Johnson—Boars: 3rd 2 yrs. and over; 3rd 1 yr. and under 18 mos. Sows: 3rd 2 yrs. or over; 2nd barrow under 1 yr.; 3rd 3 barrows under 1 year.

Linquist Bros.—Boars: 1st 18 mos. and under 2 yrs.; 5th under 6 mos. Sows: 5th 6 mos. and under 1 yr.; 5th under 6 months.

University of California—Boars: champion, any age, bred by exhibitor; 1st and 4th under 6 mos. Sows: 1st and 2nd under 6 mos.; 1st boar and 3 sows under 1 yr.; 1st boar and 3 sows under 1 yr. bred by exhibitor; 1st 4 swine get of some sire; 1st 4 pigs, any age, produce of 1 dam; 3rd barrow under 1 yr.; 2nd pen of 3 barrows under 1 year.

J. K. Fraser—Received silver trophy from National Duroc Jersey Record Association for fat barrows and breeder's young herd of boar and 3 sows.

O. I. C. CHESTER WHITE.

C. B. Cunningham—Only exhibitor; all awards.

HAMPSHIRES.

J. W. Henderson—All entries, all awards.

YORKSHIRES AND OTHER BREEDS.

O. Lockhart—All entries, all awards.

SHROPSHIRE SHEEP.

T. S. Glide—2nd ewe under 1 year.

Bishop Bros.—All other awards, including champion ram and ewe.

HAMPSHIRE SHEEP.

University of California—All entries and all awards.

DORSET SHEEP.

T. S. Glide—All entries and all awards.

SPANISH MERINO.

J. M. Howell—All entries, all awards.

FAT SHEEP.

University of California—All entries, all awards.

Due to a lack of space and time, we are unable to print the awards in the Horse Division, but will give them in our next issue, also a review of interesting exhibits made by different breeders and firms.

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Woodland, Cal.

Legumes for Hogs.

To the Editor: If space permits, kindly answer through columns of PACIFIC RURAL PRESS the following:

1. Is the garden pea, such as Stratagen, Alameda, etc., considered a profitable crop to raise for putting weight on hogs?

2. At what stage should the crop be harvested to retain the sweetness in the stalk?

3. Would the cow pea be a better crop of hay from a standpoint of feeding value?

4. How about the soy bean?—B., Fallon, Cal.

1. All the peas you mention will serve the same feeding purposes. The best for you will be the one making most growth and that has to be determined by trial. All these legumes are better for growing hogs than for putting weight upon a mature hog; or the latter purpose they can be fed with barley or corn to good advantage.

2. They contain most valuable substances throughout the whole growth if cut after pods have formed and before the straw yellows much; they are also most acceptable to stock at that stage of growth.

3. Cow peas are no better as substance but they will make more growth in high heat if soil moisture is adequate. Common peas will stand light frost; cow peas are really beans and will be killed by light frost, usually.

4. Soy beans have not been much grown in California. Will readers tell us what they think of them?

5. All the plants you mention are legumes.

STOCK TROUBLES—WINTER FEED.

To the Editor: I have a cow that we are unable to get with calf, although we have tried a number of times. She is a comparatively good cow and would be better if we could get her to come fresh. Can you advise any thing that we could do to bring this about?

I recently bought a horse, rather old and thin, but a good eater, and in generally fair shape. However, I have trouble with the harness rubbing sores on her, and I have not been able to keep her entirely free from them. She is a good traveler and I only use her with a buggy. Can you suggest anything that will improve this conditions?

Can you suggest desirable crops that may be sown on unirrigatable land this fall after the first rains, that would be adapted to feed to cows in connection with alfalfa hay. I have in mind to plant something in the line of root crops, to be followed with early potatoes and later with corn. Would this be advisable, and where is it best to plant early potatoes? —M. F. P., Los Molinos.

Veterinary Answer by Dr. E. J. Creely.

Eight hours before being put to the bull, insert a prepared pledget into the neck of the womb. Any druggist or instrument house can furnish the pledget. Bathe the affected skin with the following solution:

Lead acetate	1 ounce
Zinc sulphate	1 ounce
Water	1 gallon

Mix and apply once or twice daily. San Francisco Veterinary College.

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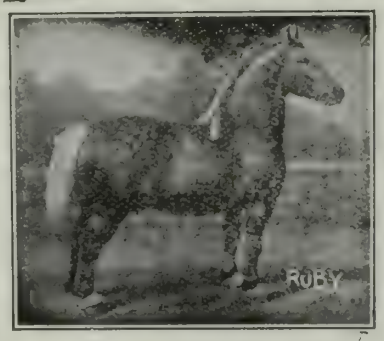

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We have a large shipment of Percherons, Shires, Clydesdales, Belgians, and Hackneys now en route from Europe which will arrive at our establishment about September 10. This is an exceptionally fine lot of horses, and it will pay you to see them before purchasing elsewhere.
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EUCALYPTUS STOCK FARM—Registered Duroc Swine and Holsteins; prices right. J. K. Fraser, Denair, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

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FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

REG. GUERNSEY CATTLE and Hampshire hogs, young stock for sale. Bella Vista Stock Farm, First Nat'l. Bank Bldg., Berkeley.

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Coming Dry Farming Congress.

The world's most important farm convention for 1913 will be held in in Tulsa, Oklahoma, October 22 to November 1. Men from thirty nations will attend the eighth annual meeting of the International Dry-Farming Congress there and will tell about methods of farming in all regions of slight rainfall or occasional drouth.

Official delegates are expected at Tulsa from every continent on the globe. China, whose farmers have tilled the same lands for forty centuries, will be officially represented by its minister of agriculture, Chun Sen Chan. Tunis, in North Africa, which has been a dry-farming region since the time of Hannibal, will have representatives in Tulsa to learn even more of science which its farmers have practiced for 2,500 years. Persia, whose agriculture is as old as history, will have at least two delegates, including the Mirza Ali Kuli Khan. Palestine will send its greatest agriculturist, Dr. Aaron Aaronsohn, who today conducts a huge farm on land which the shepherds used in the time of Christ.

Fourteen governors of States and scores of congressmen have accepted invitations to be present. On top of all these will be tens of thousands of actual farmers who will come from every State in the Union and from every province of Canada to study methods whereby they may increase the yields per acre on their own farms.

The real purpose of the International Dry-Farming Congress and of its meetings is to teach methods for the conquest of drouth. It has nothing to do with politics, colonization or religion. It is not an agricultural college, neither does it conduct experiment or demonstration farms. It merely collects from all possible sources the available information about methods whereby farmers may increase their yields per acre, the quality of their crops and their bank accounts in all regions of light or irregular rainfall. It then passes this information on, through its annual conventions and its publications, to the farmers in many nations.

CARE OF HARNESS.

"A stitch in time saves nine." It does more, it saves money. Therefore, any steps which will lead to that end should obviously be taken. One open to every farmer is in the proper care of his harness. On no account should it be thrown down on the ground, but it should be hung in a dry shed when not in use. Twice a year, at least, it should be thoroughly washed and dressed with neatsfoot oil. A good dressing for black harness can be made from 2 pounds mutton suet and 3 pounds beeswax, melted over a slow fire; 4 pounds sugar, 2 pounds lamp black, 2 pounds soft soap, and ½ pound indigo powder. When the whole has been thoroughly mixed, ½ gallon of oil of turps should be added. If the harness is brown the lamp black and indigo powder can be left out. Copper rivets have their place as a means of repairing harness, but it is a mistake to put these in some places where stitching is necessary. Collars should be well fitting, and it is essential to hang them up when not in use. While there is little danger of sore shoulder, when a hard, well-fitting collar is used, if the lining becomes broken it should receive immediate attention. It is better to put a pad above and below a sore than to cut a hole in the collar, but when this has to be resorted to it is advisable to sew the lining so that the body of the collar is kept firm.

A COMPARISON OF THE COSTS OF HEATING.

To speak of the costs of electric heating without making a comparison with the methods that have heretofore controlled the field would be practically useless, unless the change is advantageous in one way or another.

With the present methods of application one ton of coal will do as much heating as 880 kilowatt-hours of electricity, or as much as 17,000 cubic feet of gas. Or we might make a simple equation, stating that 1 ton of coal equals 880 kilowatt-hours of electricity, equals 17,000 cubic feet of gas. If coal costs $6 per ton, gas 33.3 cents per 1000 cubic feet, and electricity seven-tenths cents per kilowatt-hours, the cost of heating would be the same for either of the three methods.

There are usually other reasons than the one of cost that determine what fuel should be used and they should of course be given due consideration.

FRED J. RANKIN.
Colorado Agricultural College.
Fort Collins, Colo.

FOREST NOTES.

Two million trees will be planted on the national forests in Utah, Nevada, and southern Idaho during 1914.

Four new State forests have recently been added to those in Hawaii, making 27 in all, with an aggregate of 683,101 acres. Of this amount, 67 per cent belongs to the territory, the rest being private land administered by the territorial forest officers.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

AIREDALE TERRIERS, the best all-around dog of the day. Puppies and grown stock. DROMORE KENNELS, Vallejo, Cal.

FOR SALE—85 highly graded young Shropshire ewes; two thoroughbred rams. Perkins & Co., Perkins, Cal.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

BRAE BOURNE RANCH—Berkshire hogs and Tri-color Collies. Young stock for sale. Mr. and Mrs. C. E. Rand, R. No. 3, Box 69, Santa Raso, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-Horns Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

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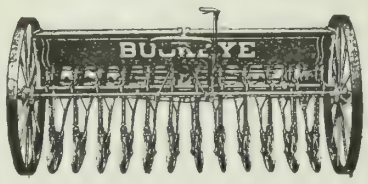

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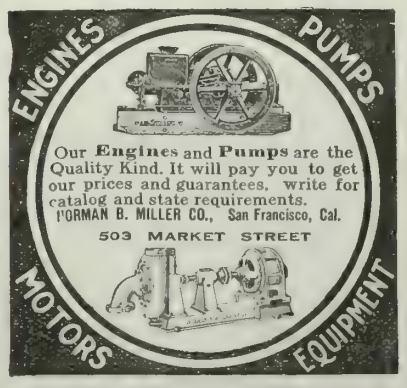

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The Right Spirit for the Poultryman.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

August was hot all over the country, and September is following close in its wake with the same kind of weather. This means a drying up of green feed just at the very time when we need it for the molting hens. Those who can turn the water on a patch of rape, alfalfa or even mangels are in luck for these are among the very best feed for helping out in the molt.

A CRITICAL TIME.—But it is not only the molting hens that suffer, it is the most critical time of the whole season for the pullets. In the spring we are filled with enthusiasm and we give good care to all alike, but when the hot days come we begin to think of fried chicken and we go out and gather in the cockerels, put them in feeding pens and leave the pullets to rustle. Now if they are on good range where there is an abundance of green feed, insect life and water, they will make out very well, but how many California chicken raisers have such a combination. Not many we venture to say, and when the cockerels are taken up and the pullets left to rustle it means that the whole business is being left to chance. Nothing on a poultry plant is of more importance than the raising of the pullets, and leaving them to rustle is not raising them. And right here is the source of much loss and many of the disappointments that come later on to the breeder. The pullets that are neglected now will never make good winter layers because the system has not been developed to the point of production. They will lay eggs, undoubtedly, but not in very good succession or a point of profit. So although it is not the pleasantest thing in the world to work during hot days let us not neglect the pullets. In the cool of the evening fill up your hoppers, or boxes so that the pullets can get an early lunch before the regular feed of grain, and in this way the work can be lightened and the pullets kept growing into maturity and money makers.

BEET PULP.—When the green feed is very scarce beet pulp makes a fairly good filler. What its real value, as a food, is I do not know, but where one has a lot of growing stock and no green feed, there must be something as a substitute and I find beet pulp very helpful and as it is cheap it serves the purpose. The way I use it is to soak it in water a few minutes, it swells up and makes about three times the quantity that is put in water. After all the water is absorbed put in a small handful of salt, two handfuls of fine charcoal, and then add my mash material. If the mash is for young stock only, I put four quarts of midlings, four quarts of wheat bran, two quarts alfalfa meal, one quart of ground corn, one quart of flaxseed-meal, and one quart of fine bone-meal, all this is well mixed with about six quarts of the moistened beet pulp, and every bit is eaten up clean. I mix it about five o'clock and put it out in the feed boxes after the chickens have gone to roost, so my young stock are filling up in the cool of the morning before I am ready to serve the regular meal. It is too hot to bother feeding in the middle of the day, but the water cans should be filled up at noon and after if needed.

WHAT THE SHIFTERS COME TO.—Pullets that are left to shift for themselves, a prey to lice and mites, and a dirty hog trough for a water can will come to the laying house in fall immature and undeveloped, no matter when she was hatched. Then she must be kept until spring before she lays an egg, these are the unprofitable poultry we hear so much about. but whose fault is it? It is just the same with the hens that have been left to shift for themselves during the molt, instead of being ready to lay as soon as the new feathers come, nature calls for a season of recuperation and the hen must be kept until the system has recovered from the depletion caused by the drain of molting. But if the hens has been well fed so that her system has not become depleted she will soon begin to shell out the eggs after the feathers are in. Feeding poultry is not something that must be done haphazard. That is, to feed a few days with a lavish hand, then when the feed begins to give out, to slow up to about one half the usual amount. That sort of spasmodic feeding is not good for either the poultryman or his flock because it leads to disappointment. Neither is it good to feed all concentrated foods, there must be bulk of some sort.

NOTHING JUST AS GOOD.—Some of the eastern poultry papers contain an advertisement of a substitute for green feed, this is in the form of a tablet to be dissolved in the water. The ad says, "it saves the bother of growing and feeding green feed and is better." Perhaps so, but I prefer the bother of growing the green feed for several reasons, but the most important one is, that nature requires that for a chicken to be healthy it must have some form of bulky food to keep the gizzard active.

WHY BLAME THE HENS.—When the hens fail to produce the eggs after the owner has neglected nearly all the most essential points in raising and keeping them the poor hens get the blame. He tells his neighbors "there is nothing in hens," his neighbors tell others, and pretty soon all the calamity howlers for miles around are predicting that the poultry industry is going to the bow wows and better quit in time."

This is the wrong spirit to hold in connection with any industry in which we are engaged; and especially so with an industry that has increased at such wonderful rates during the past years. Rightly conducted a good poultry plant will bring in a profit for money invested all the year round and furnish healthful exercise and health for the whole family. Drought and short crops may impoverish the farmers in any locality, but it does not discourage the poultry raiser that knows his business, because he can get feed brought in from other districts and his product can be shipped out to other markets. When any calamity occurs in a locality it looks as if the hens and cows worked overtime to help out, so if we look at the poultry business in the right spirit, we cannot fail to see that while there may be times of depression there never really is a time when we need spell "failure" because unlike the farmer, the poultry man has control of his crop.

If the hens are not doing business at the old stand, it is up to us to find out

POULTRY.

ORPINGTONS, BUFF AND WHITE—Summer sale of stock. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

FOR SELECTED EGGS AND CHICKS from S. C. White Leghorns, see Hopland Stock Farm advertisement.

CROLEY'S PIONEER EGG MAKER—Makes poultry pay when egg prices are low.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

BRONZE Turkeys and Eggs. Ed. Hart, Clement, Cal. Large size, good plumage, early maturity.

CROLEY'S HIGH GRADED HARD SHELL—The leader in poultry shell.

A QUICK MOLT

You want a well balanced ration of good strength in protein like

COULSON'S EGG FOOD

to get through the molt quickly and get your share of eggs in the fall.

Write us for name of nearest dealer.

COULSON POULTRY & STOCK FOOD CO., Petaluma, California.

PENNANT STRAIN

BARRED and BUFF PLYMOUTH ROCKS.

A few choice cockerels and pullets left. Eggs for hatching after January 1st.

JAS. M. MONTGOMERY, 4360 Fleming Ave., Oakland, Cal.

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Are you having difficulties with your present pumping system? Are you getting only part of the water your well should produce? Is the expense of operation eating up the profits? Is your pump continually out of order, almost always needing some kind of repairs? With the old style pumping system you are bound to have trouble of this sort more or less.

The Layne & Bowler System

Is the final choice of the up-to-date modern pump user. It has eliminated all his difficulties, and has given him efficient, continual service the entire year at less cost of operation. The Layne & Bowler pumps are simply constructed—no rods, valves, plungers or cup leathers, and they need hardly any attention. They are built to meet the conditions under which they must work.

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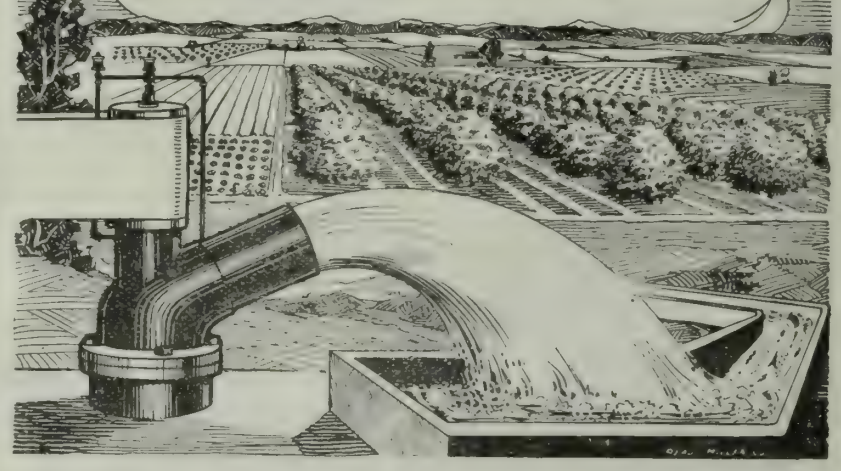


HOPLAND WHITE LEGHORN PULLETS

After October 1st will have 1000 four and five months old Pullets for sale at $12.00 per dozen.

We are now booking orders for January and February hatched Baby Chicks, from selected standard matings at $15.00 per hundred.

Hopland Stock Farm, Hopland, Cal.

POULTRY DEPARTMENT

TEN THOUSAND HEAD OF TURKEYS WANTED FOR THANKSGIVING

We want the farmers of California to raise ten thousand head of choice turkeys for our Thanksgiving trade. Last year we sold fancy dressed turkeys as high as 30 cents a pound. Commence now to get your turkeys ready for the Thanksgiving market. Have them as large and fat as possible. Write us immediately how many head you will have ready for sale at this time, as we want to keep in touch with you from now on until after Thanksgiving and Christmas. Send us the names of all of your neighbors who have turkeys and about how many head each one has on hand, and we will certainly make it to your object to do so. Mark and consign all produce you have on hand to us at San Francisco.

W. C. PRICE & CO., General Produce Commission Merchants, 211-217 Clay St.

MAKE BIG MONEY PULLING STUMPS

Pull the stumps from your fields and replace them with big crops. Don't pay taxes on idle land.

The Hercules All Steel Triple Power Stump Puller

pulls an acre of stumps a day. Pulls biggest stump in 5 minutes. Guaranteed against breakage for 3 years. 30 days free trial. Send name for book, free—and special low-price offer. Address

Hercules Mfg. Company, 912 22nd St. Centerville, Iowa, U. S. A.

the why and wherefore. Eggs are not a glut on the market just now, that is strictly fresh eggs, because the hens are mostly in the molt and pullets have not yet commenced to lay, but the price is fairly good with a prospect of being better and the poultryman who nas plenty of green feed during these hot days has a bonanza, even though his hens may not be laying very well at the present. The green feed and care he gives now will more than come back to him two-fold later in the season.

MATURING THE PULLETS.—The early hatched pullets should be prepared now for winter laying. If they are out on range and have good shelter very little extra work need be done, but it is always best to have them near at hand where they can be given proper care. If they have grown well and made the bone, according to the breed, then any good laying mash can be fed to them in the same manner and proportions as is fed the hens. If the mash does not contain meat or some form of animal food it must be fed separate, or if skim milk is to be had that will take the place of meat, and is really better as a starter for egg production. Mix the mash with it and also they may have milk to drink, providing it does not physic them too much. That must be left for the judgement of the feeder, if the milk causes a lax condition of the bowels it can be scalded and that will make things all right. If milk is scalded, feed it just as it is, whey and curd together; there is some good elements that go to egg making in whey, though it is aften thrown away as of no account. If there is anything that would fill the place of green feed it would be milk, so as a starter for pullets I give it first place. Grain, milk and green feed would make a balanced ration that nothing could beat, but the grain should not be all one kind. A mixture of wheat Gyp corn and oats would be better than all one kind, no matter which grain was used.

STATE FAIR POULTRY AWARDS

The directors of the State Fair were able to issue a catalogue of awards at the poultry show, in attractive bulletin form, very soon after judging was finished. The specials are in part as follows: Best male and best female in American class, Twin Oak Farm, Livermore; best male and best female in Asiatic class, Mrs. P. W. Nahl, Oakland; best male in Mediterranean class, Williams Brothers and Brace, Fullerton; best female in Mediterranean class, C. W. Hansen, San Mateo; best male and best female in English class, Twin Oak Farm, Livermore; best male and best female in French class, Mrs. Emma F. Reid, San Jose; best Ornamental Bantam male, Fred A. Arnold, Stockton; best Ornamental Bantam female, A. Morse Bowles, Petaluma; best Game Bantam male and best female, Arthur Dixon, Fresno; best drake and duck in show, William A. French, Stockton; best gobbler in show, Mrs. B. Hocking, Gusti; best turkey in show, Calla Grove Farm, Manteca.

PASSING OF A PIONEER.

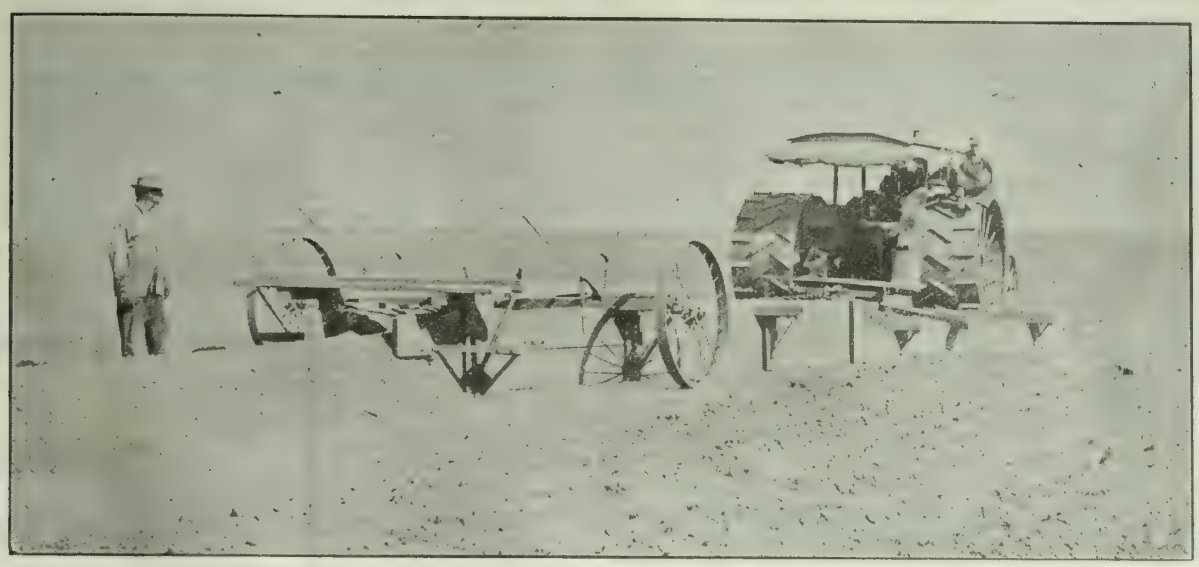
We have received notice of the passing away in Potter Valley of Ira W. Adams, a pioneer miner and farmer of California, at the age of 80 years. Mr. Adams came to California in 1851 and engaged in mining for a number of years. In 1872 he was married in Petaluma to Miss Mary Augusta Cromwell and lived in Sonoma and Mendocino counties ever since, most of the time on his farm near Calistoga, from whence in 1903 after the death of his wife, he moved to Round Valley, Mendocino county, to live with his daughter, Mrs. C. A. Carner. He was an old friend of the PACIFIC RURAL PRESS and contributed many articles upon gardening and other agricultural subjects which proved of great interest and value. He leaves behind a family of four children and many friends to mourn his loss.

DECEIT IN RADIO-ACTIVITY.

The United States Department of Agriculture, through the Bureau of Chemistry, has issued the following warning to the public in regard to the so-called radio-active mineral waters offered for sale in bottles.

"There are indications of the beginning of an attempt to perpetrate a great fraud on the American people through advertising certain mineral waters as possessing radio-activity. These waters, in some cases, are taken from springs, the waters of which as they come from the ground do possess cetrain radio-active properties. Examination of many of these waters by the Department's specialists indicates that whatever radio-activity they possess at the spring is due almost entirely to radium emanation rather than to the presence in the water of any substance possessing radio-activity. These emanations in the form of gas quickly disappear from the water and as a result, after the water has been bottled a short time, it will possess practically no radio-activity. The belief long held by many people that some mineral waters used at the springs are more effective than when bottled has been explained by some on the ground that the beneficial effect of these waters is due to radio-activity. As the radio-activity disappears soon after the water is taken from the spring, any effect due to the radio-activity must be lost in a short time. If the radio-activity of a water in a spring is 100, four days after bottling it will be only 50, and twelve days after bottling 10. In a month it will be practically nothing compared with the original radio-activity of the water at the spring. The public, therefore, is warned to regard with suspicion any water advertised as possessing radio-activity. As far as the Government's specialists have been able to ascertain, no bottled water, no matter how radio-active it may have been at the spring, retains this radio-activity for any length of time.

Something New—Schmeiser Alfalfa Land Checker and Leveler



Levels and checks land at one-third the cost of doing such work by any other method.
Levels and checks the land better and quicker than any other implement, and
SAVES YOU TWO-THIRDS (2/3) THE COST.
50 to 100 acres checked and 25 to 50 acres leveled, in one day, using either team or engine.
If you don't believe that SCHMEISER ALFALFA LAND CHECKER AND LEVELER will save you two-thirds the cost, come to Davis and see it in daily operation. Then you'll KNOW.

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When you buy a telephone, the polished case, the low price and indefinite statements about "service" may influence your decision—but it's quality that counts in the long run. Be sure that you buy only

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They are of the same high grade and are made in the same factory as the 7,500,000 "Bell" telephones in daily use. Every one is guaranteed perfect and of "Bell" quality—which means reliable and economical operation under all conditions, low maintenance cost, and long life.

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EQUIPMENT FOR EVERY ELECTRICAL NEED

"CALIFORNIA FRUITS AND HOW TO GROW THEM"
For sale by PACIFIC RURAL PRESS, 420 Market Street, San Francisco

The Home Circle.

THE PRICE OF A PORTRAIT.

It was not so very long after returning from a voluntary European exile, to his native Fredericksburg, before the story of an eventful youth leaked out from the lips of his garrulous valet.

This exile had been as long as most men live—about sixty years having been spent in the capitals of the Continent.

He had lived a solitary life, unblessed by wife, uncheered by children, in a celibate devotion to a love he could not win.

The white haired, courtley gentleman was a disappointed beau of sixty years ago, who had loved, discovered a rival, challenged and killed him, to hear from the lips of the woman he loved that the man that was slain was dearer than life to her, while his presence was now abominable.

Then he went to Europe. During the first year of his sojourn, nature seemed charged with the magnetism of the woman he loved. Every evening when passing some pink, blossoming, fragrant grove, he imagined he saw her face, only to find on nearer approach that it was but the figments of his fancy. When the twig or blossom of a tree brushed his brow, he was almost sure he was touching some tendril of her hair that fell upon his face, and the singing of the pines on the Swiss mountain was the breaking of her heart as he left her, and the ocean echoed the sobs he had heard as he fled from her presence.

Years cured him of the phantasies—time cures most anything—and as he felt the sun of life droop slantingly from his shoulders, the home of his childhood, the home of his darling Louise grew more frequently into day dreams, and one great wave of longing swept him at last back to his native shores.

Every place it seemed to him was so new, so strange, after these many years. The faces that he knew in youth had been replaced by younger, not sweeter faces—there is no artist like memory. Occasional voices came from the throng that he thought must be of children of some that he had known. The houses, too, for the most part were new, garish and fanciful; his memory, filled with the stately homes of long ago, was irritated beyond measure of architectural achievements, and he would turn, with a sigh of graceful relief, to the stately colonial mansion he had always called home. Seeing nothing but innovations around him, he grew very introspective, fearing to seek out the few remaining relics of his former acquaintances, dreading as a physical thing the change he knew he would find. In himself he knew no change, for his heart had never aged, loving only once; yet he would wander about town, among the older streets, with a wistful look in his eyes, but half cloaked by his habitual air of dignity and reserve.

He seemed to be always looking for some familiar scene, or glancing covertly at strangers for an old-time face he loved, or listening for a voice that had long been stilled in death. He soon became a familiar figure on the promenades. To the casual observer he was noticeable for the elegance of his attire, together with an undeviating adherence to the fashions of his youth. One had to turn and look after him, as there seemed such a rare and indescribable air about him of the old-time gallantry and courtesy.

Looking into his still undimmed eyes, you would say his life had held but one ideal, his memory—the picture of one departed face. There seemed no shadow of the guilt of murder on his brow; he had fought according to the code, which acquits the victor in a duel of the crime which of old was the stain of Cain.

* * * *

One morning, some months after his return, he might have been seen picking his way along a muddy, narrow street, in an antiquated quarter of the town. He was immaculately clad, and had a pleasurable gleam of anticipation in his eyes, and a quickness of step, not at all like his usual slow and stately tread. He had just read the announcement in the morning's paper of the sale of some pictures, most of which were portraits belonging to the estate of Richard Coates Pinckney, deceased, who with himself had been a beau in the early thirties.

The collection was bound to have in it some of the pictured faces of men and of maidens he had known so long ago. His life was only a dream now of dear departed past; would not these pictures help him to more truly realize his dreams? He could hang them, he thought, in the dim old library next to the picture of himself, a youth.

He entered the auctioneer's store as that functionary was vociferously extolling the manifold virtues of a consignment of watches with gold-filled cases and brass works. The old man fidgeted around nervously while this was going on until his eye chanced to rest upon the pictures advertised. They were piled one upon the other, face inwards, and leaned against the wall.

He walked hurridly over and proceeded to examine them. He glanced rapidly through the pile, recognizing many old-time faces, each of which brought its accompanying train of memories, all causing the old man's face to glow with a gentle and tremulous light. The two next the wall he did not see, for as the auctioneer was making but poor progress with the watches he took up the next consignment—the portraits.

They were placed face upwards on his stand, this arrangement bringing on top those which had been next the wall. The first was the portrait of a belle—a beautiful aristocrat, clad in the garb of sixty years ago. The face was like that of a court beauty of old-time France, as fragile and apparently as delicate as the most fragrant lily of the valley, whose eyes from their liquid depth must have seen only to love, and the lips seemed like the thin, curled-up ends of a rose petal. But the paint was scaling from the canvas, the frame was black with age and tarnish, so the picture was of no intrinsic value to the throng of dealers and pawnshop keepers who were present. But the breath of the old man came and went almost sobbingly as he waited for some one to bid. The auctioneer, glanced at the picture, appeared at first to be a trifle discouraged, and holding it up said, almost apologetically:

"How much do you bid?"

"Twenty-five cents," was the reply of a by-stander, made half in contempt, rather than with any idea of becoming the ultimate possessor of a specimen of an abandoned school of art.

The auctioneer tacitly accepted this as the primary valuation, while with the monotony of his craft he droned out:

"Any one make it thirty?"

There was but one other bidder. It was our acquaintance, who, pushing to the front, darted one glance of indignant protest at the first bidder, while in a broken voice he cried out.

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This Coupon Entitles You to A Free Sample of
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"SA-SA-MA"	A high-grade uncolored Green Japan Tea	60c per lb.
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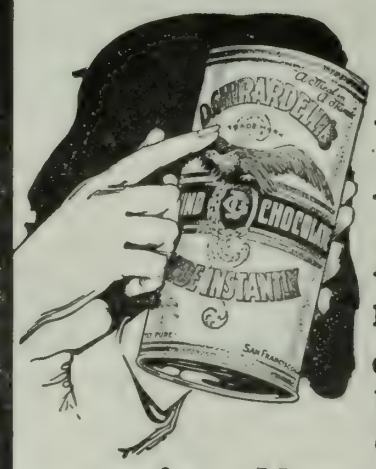

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This is due to the fact that this famous food drink has become almost universally used because of its purity, its unvarying goodness—its unrivaled high quality.

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Write us today for a sample can and you'll serve this health beverage at every meal.

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Be sure to get our manufacturers prices before you buy paint. We'll save you money on paints for House, Floor, Wagon or Barn. Barn Paint.
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Buy your lumber from the first grading. Don't buy from retail yards that sell lumber that has been graded 3 or 4 times. Ours is all first grade and first quality. We sell direct at mill prices. Send us your lists and get our rock-bottom, prepaid prices.

Send us today your lumber bill. Name your shipping point. We will tell you just what it will cost freight paid to your station. Catalog free.

Ainslie Boyd Co "Reliable Dealers"
2209 Westlake Ave Seattle

"Two thousand dollars."

There was something in his tone, more than the ridiculously high bid, that made every one start. Everybody present recognized in that quavering cry the mingling of indignant protest at a shrine profaned, love, the sorrow of years, together with the tears of age, and they guessed it was the price he paid for the chance found portrait of some darling of his youth.

Never waiting to see what else the collection held in store, and telling where to send the bill, he dispensed with the services of an ubiquitous porter, and clasping his purchase to his breast he hurried home trembling with excitement.

On reaching the mansion he pushed past the servant who met him at the door, and who would have relieved him of his bundle, and rushed up to the dim wainscoted library. Here he untied the precious parcel, kissing the canvas, unresponsive lips again and again, while his blood hurtled through his veins with the long-departed ardor of youth. He climbed upon a chair and hung the picture in a recess opposite a portrait of himself; on getting down he sank back into an easy chair and smiled senilely upon the implied domesticity of the arrangement. He could not gaze his fill on that dear, dead face; the butler, entering to kindly remind him that his dinner was waiting, was sent packing from the room, and as he closed the door behind him heard his master softly murmuring, "Louise, Louise."

All night he sat and smiled up to the portrait on the wall, and the candles in the great candelabra went out, but love needs no such light as theirs, and the moon came up, casting a tristful gleam upon the maiden's face; the gray dawn came, and still his heart smiled out upon his lips. His valet, anxious for his welfare, coming to find why he had not retired, discovered him smiling still from the deep cushions of the chair. His face seemed to have a faint color, in the dim light, and appeared young, almost boyish in its expression—such had been the rejuvenating power of his love.

But it was only the semblance of love. He was dead.—A. B. Gordon Davis, in Saturday Review.

More Ancient.

"They say that chess is the oldest game," remarked the Old Fogy.

"Poker is older than chess," said the Wise Guy.

"How do you know?" asked the Old Fogy.

"Didn't Noah draw to pairs on the ark and get a full house?" replied the Wise Guy.—Cincinnati Enquirer.

Ouch!

He (bitterly)—I suppose you consider it quite a triumph to make a fool of a man.

She—Oh, dear, no! A triumph is something done that was difficult of achievement.—Brooklyn Life.

Artful Dodger.

Past stall after stall went the rich merchant, followed by a footman in smart livery. It was the annual village bazar.

"Ah, Mr. Fitzbreedon," said a really sweet and charming lady at one of the stalls, "and what are you going to buy? Dear old auntie and I am running this table, and we have home-made cakes, aprons, penwipers and ———"

"Yes," said F., "and I'll buy just one of each. But do you sell kisses at your stall?"

"Oh, certainly!" came the ready reply. "One guinea each!"

"Aunt," remarked the fair and dainty damsel, "forward, please! Two kisses for this gentleman!"

For a moment the man of means was nonplussed, but only for a moment. Then he turned to his servitor.

"James," he said, coolly, "just take this purchase, please!"—London Penny Pictorial.

"Never count your chickens before they are hatched."

"Of course!" sneered Mr. Crosslots. "You're another of those people who want to take the chief pleasure out of the poultry business."—Washington Star.

Is her hair a crown of glory?"

"Yes, and every night she abdicates."—Town Topics.

"INHUMANITY OF SOCIALISM."

This is the title of a book by Edward E. Adams of San Francisco, in which, in a very brightly written argument, the author undertakes to show that Socialism is really at enmity with the best interests of man individually and of human society, chiefly because it denies the truth which experience has demonstrated to be the factor of progress hitherto and which are the real basis of hope for the future. The work is one to which both opponents and advocates of modern socialism should give heed. It is published by Paul Elder & Co., San Francisco, at $1.00 net, per copy. In point of style the book is one of the most tasteful ever published in California.

The KEWANEE System of Water Supply

provides an absolutely safe and satisfactory water service, equal to that offered by any city water works. An abundant supply of water always available and delivered under strong pressure throughout the house, barn or grounds.

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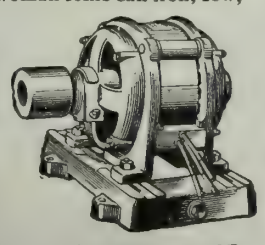

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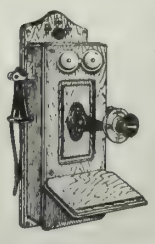

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THE MARKETS.

San Francisco, Sept. 24, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Arrivals of Northern wheat have been comparatively large, but the shipments are mainly on orders for local mills, and spot values remain about as before, although trading is not very active. There is a little easier feeling, however.

California Club, ctl	$1.52½@1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½@1.55
Northern Bluestem	1.67½@1.70
Northern Red	1.55 @1.65

BARLEY.

Two export cargoes have already been shipped from this port, but conditions are said to be unfavorable for any large shipping movement. The local spot market is rather quiet at present, but holders are taking a firm stand as to values, and some grain is moving at the range quoted.

Brewing and Shipping	$1.40 @1.45
Choice Feed, per ctl	1.35 @1.40
Common Feed	1.30 @1.35

OATS.

Trading in seed oats is gradually increasing, prices being held rather high all around. Red seed is again offered at the price quoted. The movement of feed grades is moderate, but fairly steady.

Red Feed	$1.65 @1.85
Seed	2.20 @2.25
Gray	Nominal
White	1.55 @1.60
Black Seed	2.75 @3.25

CORN.

The extreme prices asked for corn in the East have materially curtailed the movement in this vicinity, and values are little more than nominal. Good California corn is held at about the same level as Eastern, but there is not much demand here.

California Yellow	Nominal
Eastern Yellow	$1.95 @2.00
Eastern White	Nominal

RYE.

Rye is moving only in a very limited way, the prices paid being within the old range of quotations.

Rye, per ctl	$1.45 @1.50

BEANS.

Beans are coming in a little more freely, and arrivals for the next month will doubtless be fairly large. Otherwise there is not much change in the market. Another good-sized lot of beans has arrived from the Orient, but such offerings have had little apparent effect on the market for local varieties. So far the largest spot offerings of new crop stock have been of large whites, which are again lower and still weak. This variety at present prices is considered about the cheapest thing on the list, and there should be a good movement. Cranberry beans are also lower.

Bayos, per ctl	$3.25 @3.40
Blackeyes	3.35 @3.50
Cranberry Beans	3.75 @4.00
Horse Beans	1.75 @1.90
Small Whites	5.00 @5.25
Large Whites	3.10 @3.25
Limas	4.75 @4.85
Pea	Nominal
Pink	2.75 @2.85
Red Kidneys	3.25 @3.40
Mexican Red	3.40 @3.65

SEEDS.

There is a little more stock arriving in some lines, but so far there has been no important buying movement, and values stand about the same as for some time past.

Alfalfa	12½@14 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	7 @ 7½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

Values show no quotable change, the local movement being on about the same scale as for some time past.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.65 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Arrivals continue light, and the amount of grain hay coming in is very small, the bulk of the shipments being alfalfa from the valley districts. With favorable conditions for the later cuttings of alfalfa, it is expected that there will be a very fair movement of this hay for some time to come, though the large offerings of alfalfa have caused a decidedly weak feeling as to values. There is more or less inferior stock offered, which receives little attention. Ordinary grades of grain hay are very quiet, most consumers being well supplied for the present, and the market shows little feature, values being maintained on about the former basis.

No. 1 Wheat, or Wheat and Oat	$15.50@16.50
do No. 2	14.00@15.50
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 95c

FEEDSTUFFS.

There is no quotable change in prices since last week. Bran is fairly steady at the recent decline, while corn products are firm, but rather dull on account of high prices.

Alfalfa Meal, per ton	$18.50@19.50
Bran, per ton	25.00@26.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	29.50@30.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Rolled Oats	34.00@35.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Onions continue in fairly good demand, both for shipment and for local requirements, and local business is fairly active with a better feeling as to values. Comparatively few changes are noted in miscellaneous garden truck, good stock of most descriptions being in very good demand. Green corn is a little easier at the top price, and some ordinary lots are offered at $1 to $1.75, though supplies of any kind are diminishing. Tomatoes have been subject to considerable fluctuation, with heavy supplies at times. Good stock, however, generally brings at least 30c in the regular trade, the lower prices being paid by canners for surplus and overripe lots. Good peas are very scarce and higher, while the market is well stocked with ordinary string and lima beans, which continue easy. Okra and summer squash also are plentiful and easy.

Onions: New Yellow, River, ctl.	95c@$1.00
Garlic, per lb	6@ 8c
Cucumbers, per box	40@ 65c
Green Peppers, box	25@ 50c
Carrots, per sack	75c
Cauliflower, per doz	50@ 60c
Green Peas, lb	5@ 6c
String Beans, lb	2@ 3½c
Summer Squash, lug box	25@ 50c
Green Corn, choice, sack	2.00@ 2.75
Okra, box	25@ 35c
Tomatoes, box	20@ 65c
Eggplant, box	40@ 50c
Lima Beans, lb	2@ 3c
Sprouts, lb.	3@ 4c

POTATOES.

Considerable Salinas stock is arriving at present, and while it meets with a very fair demand, prices are beginning to weaken. Good river stock, however, is in fair demand at slightly better prices, and some fancy delta goods sell up to $1.25.

Salinas, ctl.	$ 1.75@ 1.85
New River Whites	85c@ 1.00
Sweet Potatoes, per ctl	1.40@ 1.60

Dairy Produce.

POULTRY.

The week opened with large offerings of Eastern chickens, several cars coming in on top of a holdover from last week. This has caused a further weakening in values, with lower quotations for broilers and young roosters. Receipts of local stock, however, continue very moderate, and the market is beginning to clean up a little.

Large Broilers, per lb	23 @24 c
Small Broilers, per lb	23 @24 c
Fryers, per lb	23 @24 c
Hens, extra, per lb	18 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	23 @24 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	1.75@ 2.25
Ducks, doz.	4.50@ 6.00
Turkeys, live, per lb	22 @25 c

BUTTER.

The market has been in rather easy condition for the past week, due probably to the warm weather, but the demand is picking up again and extras, at least, are firm at a slight advance. Lower grades, however, remain weak.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	34	33	33½	33	32	33
Prime Firsts	30	30	30	30	30	30
Firsts	29	29	29	29	29	29

EGGS.

While supplies have been fairly large for the past few days, the lower prices have stimulated a better consuming demand for fresh stock, and both extras and pullets are firm at a slight advance. Larger production is reported, however, and values may be held down to about the present figures for some time.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	36½	37½	37½	37½	37	38½
Selected Pullets	31	31	31	31	31½	32

CHEESE.

Arrivals of new fancy flats have been very light, but the demand also has been rather slow this week, and the price has dropped ½c. Y. A.'s are steady as last quoted.

Fancy California Flats, per lb	16 c
New Young Americas, fancy	16½c
Monterey or Jack Cheese	16 @17 c

Deciduous Fruit.

A good many pomegranates have been coming in lately, and find about the usual limited demand at the prices quoted. The end of the hot weather has caused a drop in the demand for watermelons, which are still arriving freely and sell at lower prices, while cantaloupes, though still plentiful, bring a little better figures for choice stock. Seedless grapes are higher, offerings at the moment being light and closely held. Muscats also are rather firm, though Tokays and Cornichons are easier, with liberal supplies. The best lots of strawberries bring a little advance, but ordinary stock remains cheap, and raspberries are lower, while blackberries are doing a little better. The apple market is decidedly firm, especially on bellefleurs. The short crop has caused an advance in the Watsonville prices, which is reflected to some extent in the local market, the demand being noticeably stronger. Newtown pippins in the smaller sizes, however, are a little easier. Bartlett pears are still selling from storage at high prices, and other descriptions are fairly firm. Peaches are lower, with little demand, though attractive stock is by no means plentiful. The first lot of persimmons appeared a few days ago, and though not very attractive brought about $1 per box.

Strawberries, chest	$ 2.25@ 4.50
Blackberries, chest	2.00@ 4.00
Raspberries, chest	4.00@ 6.00
Huckleberries, lb.	4@ 7c
Cranberries, Coos Bay, box	Nominal
Apples:	
Gravensteins, box	1.50@ 2.00
Greenings	75c@ 1.00
Bellefleur	1.25@ 1.50
Newtown Pippins	1.15@ 1.50
Common	50@ 75c
Pears, Bartlett, box	1.75@ 2.25
Other varieties	75c@ 1.25
Peaches, box	45@ 75c
Lugs	50@ 65c
Plums, crate	50@ 85c
Figs, double layer, drawer	50@ 70c
Cantaloupes, River, lugs	50c@ 1.25
Watermelons, per dozen	1.75@ 2.50
Grapes: Seedless, lugs	1.00@ 1.50
Malaga, crate	50@ 65c
Muscat	75@ 90c
Black, lugs	60@ 75c
Tokay, lugs	85c@ 1.00
Cornichon, crate	65@ 85c
Quinces, box	65c@ 1.00
Pomegranates, box	75c@ 1.50

Dried Fruits.

Quotations are no longer given on 1912 stock, as the old crop is well out of first hands in all lines. There is said to be some old stock, especially peaches, in dealers' hands in the East, but it is doubtful whether this amounts to much by this time. The most interesting feature of the market at present is the flurry in large prunes, as the trade throughout the country is at last waking up to the fact that large sizes will be very hard to get, and there has been a heavy volume of inquiry of late. Packers are accordingly out with offers of 6c and will do well to fill their requirements at that. The medium sizes have also been moving fairly well, but prices stand as before. Evaporated apples have been marked up again, with prospects of a light output everywhere. Peaches show gradually increasing strength, with better inquiry in outside markets, though values here have not advanced. Other lines are quiet but firm, with limited offerings. The raisin market seems to be in good shape, with very large sales of all varieties reported. Curing has progressed rapidly, and it is certain that the crop is far short of early estimates. The shortage combined with a growing demand has caused a further advance in prices, and growers are getting a little better figures for seedless varieties. The New York Journal of Commerce says:

"Extreme prices have been paid by packers for what prunes there are available in the various producing centers in California. As high as 8c bulk basis has been paid the growers for prunes that will average 30s, and 6c bulk basis for goods that will average 70s, and it is estimated that there are not to exceed 3500 tons unsold in growers' hands. Thirties-forties are held at 7¾ to 8c; 40s-50s at 6¾ to 7c; 50s-60s at 6¼c; 40s to 60s, inclusive, 6⅜c. Although the Associated company has advanced the price on raisins to a 7⅛c basis for fancy seeded, it is reported that the members of this association are still offering at the original prices. Peaches and apricots are in good demand and prices firm and available stock cleaning up rapidly. It is estimated there is not to exceed 500 to 750 tons of apricots left in growers' hands, and none of the packers are carrying surplus stock. At least two-thirds of the peach crop has been sold to the packers, who now find on grading that the percentage of large fruit is falling down materially. Consequently, extreme prices are asked on the three higher grades. Spot prunes are going out rapidly, trade showing a disposition to take care of their early fall requirements. With the fresh arrivals of 1912 crop, present indications are that spot stock will be cleaned up before the new arrives."

Evap. Apples, 1913	6½@ 7 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4 c
Black	2½@ 3 c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4¾@ 5 c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	3¾c
Thompson Seedless	4 @ 4½c
Seedless Sultanas	4 c

Citrus Fruits.

Local values show no further change, notwithstanding reports of higher prices for lemons in the South. The demand for lemons and limes is hardly as urgent as last week, while oranges are moving in about the same limited way as for some time past.

Oranges (per box):	
Valencias	$ 4.00@ 6.00
Grapefruit, seedless	5.50@ 6.00
Lemons	4.50@ 8.00
Limes	10.00@12.50

Nuts, Honey, Hops, Etc.

NUTS.

There is nothing new in walnuts, which are about out of the market at present. Most of the new crop almonds are said to have been shipped East, and most growers are well sold out.

Almonds, new crop—	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts	Nominal

HONEY.

Local business continues moderately active, but the supply is light, and offerings from the country have not been large of late. Values are accordingly well maintained.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

The local demand for beeswax is very light, but supplies here are small and closely held at about the former range, with no heavy offerings from other quarters.

Light	30 @32 c
Dark	28 @30 c

HOPS.

The past week has brought a very active movement of hops, both in Sonoma and Mendocino counties and in Oregon. The demand has been strong, bringing prices up to 26c, with some sales reported at 26½c, and growers who have not yet sold look for a 30c market.

1913	20 @26 c

Live Stock.

The only quotable change is an advance in dressed veal and heifers. Live cattle are decidedly firm, most of the supplies at present coming from Nevada. Calves also are in short supply, and hogs are decidedly scarce, while lambs are coming in rather freely.

Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7¼@ 7½c
Medium	6½@ 7 c
Heavy	5 @ 6 c
Hogs: Grain-fed, heavy	8¼@ 8½c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4 @ 4¼c
Ewes	3¼@ 3½c
Lambs: Suckling	5¼@ 5¾c

DRESSED MEATS.

Steers	12¼@12¾c
Heifers	11½@12½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

The consuming demand seems to be picking up in Eastern markets, and local buyers are gradually taking a little more interest, though the movement has not yet been very heavy.

Fall clip:	
Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

Salted hides have been marked down quite sharply from the old quotations, but there is a feeling of strength at the present level, as supplies are very light and tanners are taking more interest in the market.

Heavy Steers, over 56 lbs.	13½c
Medium	12½c
Light Steers, under 48 lbs.	11½@12½c
Heavy Cows, over 50 lbs.	11½@12½c
Light Cows, 30 to 50 lbs.	13 c
Kip	13½@15 c
Veal	16½@18 c
Calf	16½@18 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

There is very little going on in the local market this week. The results of the last auction sale were highly disappointing, lower levels being established in prices, which are much lower than those that prevailed during the spring. A good-sized shipment of heavy stock from northern California is expected here before long, and it is hoped that better values will be realized, though from the number of local firms that have been selling out their horses lately, the outlook cannot be considered very reassuring.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500 lbs	100@150
Wagon Horses, 1250 to 1350	100@125
Delivery Horses, 1050 to 1250	75@100
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

WICKSON ON RURAL CREDITS.

There has been inquiry as to whether we intended to publish in book form Professor Wickson's "Out in the World" letters on rural credit and co-operation. We had not so intended. When we asked Prof. Wickson what, in his opinion, would be the demand, he said, "About as much as for a last year's birdnest," which did not quite satisfy us. If there is a demand we would like to meet it, and therefore ask those who are willing to pay a dollar for the full series of letters in neat book form to drop us a card to that effect.

We have just received the program for the third annual meeting of the California Association of Nurserymen, to be held at Fresno, October 16, 17, and 18. The big guns of horticulture in the State are slated for addresses, and at the conclusion of business a banquet, jinks, and pleasure trips are scheduled. Altogether, the meeting promises to be the best ever, and the nurserymen of the State will doubtless drop all business to attend.

Over 200 new subscribers were added to our list this week, which, added to those we already had, will help some. A good percentage of the new subscribers are from Nevada, where there is no farm paper published. As Nevada farmers buy from California as well as sell their products to us, their trade will naturally be commanded by our advertisers. The policy of the RURAL PRESS is to continue building a strong subscription list, and to do this we expected to publish a better paper each issue than we have in the past.

RASPBERRY SUGGESTIONS.

Mr. E. S. Ridge, Puyallup, Western Washington, who has over 20 years' experience in growing bush fruits in that valley, states it would be better to plant the rows 8 feet apart instead of 6 feet, as has been the custom in the past, with rows running north and south if possible. He says in a letter to the Northwest Horticulturist:

"I would support the canes with wires as we ordinarily do, with this difference: I would raise the east wire about six inches higher or four and one-half feet. The cross arms that hold the wires would be 30 inches long, two-thirds of the length to extend to the east and one-third to the west. I would train all the canes to the east and fasten them to the wire looping a strong twine around each two canes, and would not top the canes. The incline of the canes from the ground to the wire would give spring enough so that they would not break over the wire; the new canes would be kept all on one side and would not interfere with picking at all. The berries would be picked from one side of the row. The advantages of this system are easier and better picking, as the berries are all on one side of the row and are not tangled.

PICKING AND PACKING.—"Raspberries should be picked as soon as they will come off the core without crumbling in picking, place the first two fingers and thumbs behind the berry and gently pull it off without much pressure. Do not hold many berries in the hand at once or they will be crushed and be spoiled for shipping, and do not put over-ripe berries in the same box with good, solid ones or they will not ship well. A soft berry soon molds and spoils the whole crate. Fill boxes full, but do not round or heap them. Take a little pains to level off the top of each box and do not let each picker fill his own crates, but have a packer do this. Do not let the sun shine on the berries after they are packed. "Vetch sown in the fall, peas or clover sown earlier, is grown between the rows to supply nitrogen and humus, and from 150 to 200 pounds muriate or potash per acre is applied and harrowed in during the winter. When barnyard compost, or liquid manure from stables is available that is also applied."

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Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

WANTED

MEN WANTED FOR PERMANENT POSITIONS.—Miller & Lux, Incorporated, require the services of a ranch superintendent, an assistant ranch superintendent, a horticulturist, two ranch foreman, a hog man, and two general cattlemen—one for Nevada, and one for California. Only men of wide local experience and with best of references need apply. Send application to Box 11, Pacific Rural Press, stating experience, references and salary expected.

WANTED—Place as superintendent; advertiser is thorough in all lines of farming, fruit growing and irrigation; experienced in working all kinds of labor. Box 17, Pacific Rural Press.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

WANTED—Cheap land, with water, on which to grow spineless cactus, San Fernando valley or near Los Angeles preferred. Will pay with Hollywood Bungalow or vacant lot, or Los Angeles elegant home. Write MEDITERRANEAN SPINELESS CACTUS NURSERY FARMS, R. F. D. 35A, San Dimas, Cal.
Wanted, agents to sell Spineless Cactus.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

WANTED—Burbank standard cactus leaves; highest prices paid. Address Sempervirens Cactus Farm, Santa Rosa, Cal.

I am interested in 2000 acres of land, very rich soil tested by University of California, situated 32 miles from Mojave, land on S. P. R. R. and only 2 miles from railroad station. I want to get some party who has complete or part complete farming implements to take full charge of place, and will make suitable arrangements with proper party. The place has never been farmed and is in virgin condition. Only want small part cultivated. Write full particulars or call on Harry M. Lichtenstein, 24 Montgomery St., San Francisco.

TREES AND NURSERY STOCK

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BEFORE COMMENCING OUR REGULAR SEASON'S advertising campaign, we desire to call the attention of plant lovers, fruit growers and our thousands of customers to the fact that we not only have a magnificent and complete line of fruit and ornamental stocks, but in addition to this will have many novelties to offer which will be worthy of attention. We solicit inquiries NOW and are prepared to offer special inducements on many lines. Mail us a list of your probable wants NOW and permit us to figure with you. Our firm is backed with 30 years of an honorable, straightforward business career and we always have our customers' interests at heart. Our annual ILLUSTRATED PRICE CATALOGUE will be ready for distribution about November 15th. If you are interested let us hear from you. FANCHER CREEK NURSERIES, INC., Box 180, Fresno, California.

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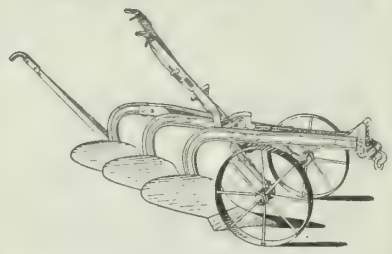

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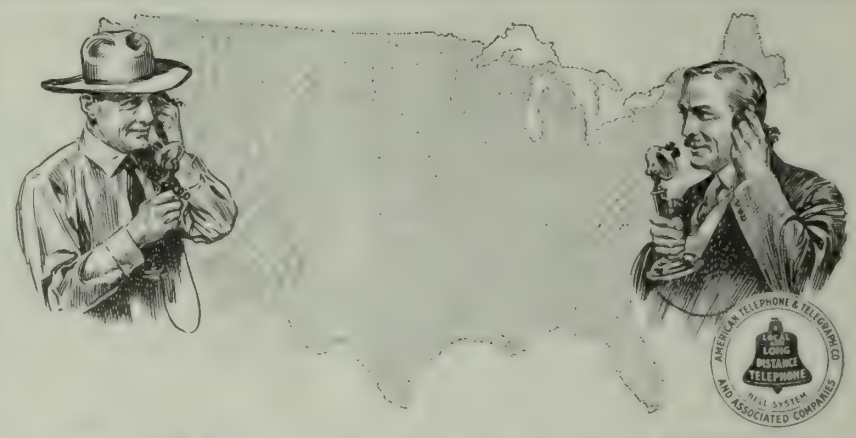

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—KIPLING.

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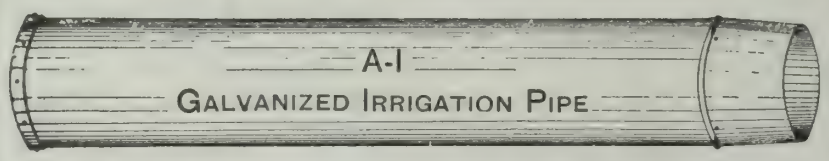

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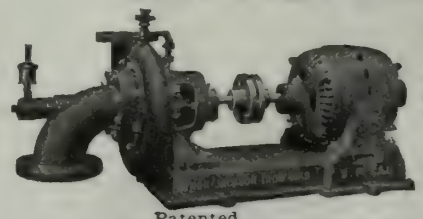

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THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 14. SAN FRANCISCO, SATURDAY, OCTOBER 4, 1913. Forty-Third Year.

The Home of the Flaming Tokay.

[BY THE ASSOCIATE EDITOR.]

Possibly if we omit the Muscat, from which the bulk of our raisins are made, the Flaming Tokay is the most famous grape of California. Certainly it is the most famous table grape and the kind most frequently considered in Eastern markets a typical California grape, and Lodi is the headquarters in California for that variety. It is not the home in the sense of being the place of origin, but the Tokay did not suffer from the change of residence. The Lodi Tokay finds just the kind of soil it wants and just the kind of climate. They grow it in other districts, but if it is found at its best elsewhere, conditions of soil and climate are sure to be very little different from those of the Lodi district.

Now this is not meant to be a boom description, for anyone who would encourage the planting of Tokays deserves to be knocked over the head, though that is nothing to the discredit of the Tokay. About ten years ago a lot of people went crazy over Tokay growing.

Glimpse at a Vineyard in San Joaquin County.

The Flaming Tokay as It Leaves Lodi for Distant Markets.

Enthusiasm was justified, for Tokays were netting a dollar a crate for Eastern shipment, and everybody rushed to get a slice of the melon. There is a limit to the amount of Tokays that the public can consume, and crates cost something, packing more, and freight still more, and when they meet competition in a year of heavy production with the Eastern grapes and other California grapes, besides the many varieties of fruits, the public can get all it wants. Last year, for example, fruit was plentiful all over the country, and much new acreage first got fully into the market, so a lot of people made nothing from their grapes, many were quite a bit poorer than if they had sold to the wineries, and none made really good profits. This year and the average year they will be profitable, but there is too much danger of overdoing the market often enough to destroy profits, and no one, without careful investigation, should be encouraged to plant more Tokays.

Why They Reach Perfection.—Lodi is especially favored for Tokays in both soil and climate. Grapes ordinarily do very well in sandy soil, and Tokays are grown on such land, but the finest Tokays come from the heavier black lands, and Black Land Flaming Tokays always top the market.

Another thing is climate. Lodi is in the central part of the great central California valley, and is directly opposite the entrance to the bays. It gets the heat and sunshine that is necessary for the best and most prolific grape growing, but the nearness to the bay and delta district gives, besides, a coolness to the nights and a humidity of atmosphere that is required for the best Tokay color and quality. In fact, aside from this variety, the Lodi section is the greatest in America for grapes (outside of Fresno with her raisins) and deserves note also for the amount and quality of deciduous fruits produced in the vicinity.

There are grapes produced for the winery, fruits for canning and drying; but for shipping alone, Lodi has twelve packing-houses that all do a big business in good years. This year, when fruit is short, grapes are going out at the rate of 30 cars a day, with 39 cars for the big score of 1913.

A Long Market Season.—Grape shipping starts about August 10, with Black Prince. Tokays from light soil follow shortly after, then from the heavy soil, and in about two weeks everything is going at full blast, keeping up strong for nearly two months. Then it slackens greatly and continues into November with the later varieties, like Cornichon, Emperor and Ferrara. With the perfection of methods of shipping in sawdust, the season will be lengthened out greatly. There are also a number of other shipping varieties grown than those named, but Tokays far outnumber all the rest put together.

There is one very nice thing about table grapes that is rarely found with other fruits (oranges being an exception), and that is the length

(*Continued on Page 316.*)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Sept. 30, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.36	.77	1.32	68	46
Red Bluff	.00	T	.82	86	54
Sacramento	.00	.01	.40	88	52
San Francisco	.00	.08	.30	78	56
San Jose	.00	.17	.38	84	44
Fresno	.00	.33	.27	90	50
Independence	.00	2.52	.24	80	38
San Luis Obispo	.00	.93	.49	90	48
Los Angeles	.00	T	.06	90	58
San Diego	.00	.10	.06	82	58

The Week.

September goes out dry as it came in—in fact, more so, for evaporation has been ample and free. This is no particular matter, except for trees which may be dry to their root-tips. Those who hurried for water for fear of this did well, and there is still great chance for good if rains should still be delayed. For not only is the soil becoming drier, but the air has been very thirsty and has drunk from the tissues more deeply than it could have done during a month of darker skies. Except for trees thus on the edge of famishing, conditions have been fine. Late fruits have been gathered and dried in rather better than usual form. Popular recreations at the autumn fairs are being most successfully pursued. Everyone is ready for the fall rains and for the work they bring.

The Reverse of the Shield.

Mr. Whitney gives on other pages a very interesting sketch of the grape industry at a leading point in the great interior valley, thus emphasizing the importance of an activity with the grape which was not foreseen by the pioneers. They had grapes growing and producing wonderfully in the interior valley, but the greatness of the raisin industry and the shipping grape industry was not revealed to them. They caught glimpses of an interior valley wine industry, it is true, but they had little confidence in it. At that time the light wine adaptations of the coast valleys contiguous to San Francisco bay seemed to be the proper field for development and investment and it was deeply cultivated, thickly sown with coin, which, for several reasons, not only failed to give increase, but quite widely refused to return the seed. Then came the wave of confidence in interior valley grape production, of which Mr. Whitney gives most recent phases in a section which the table grape has made famous. In connection with his statements, it is important to emphasize the fact that the grape industry in those coast valleys which were at first almost exclusively popular for it, is showing its power to come back in a most unmistakable manner. Sales of choice claret grapes are being made this year in the neighborhood of $27 per ton, which is nearly four times the minimum once paid for them and twice the price at which one of the Crockers with prophetic eye, agreed to contract for the whole product of the region for a long term of years if he could get control of it. It is beginning to be more clearly demonstrated than ever that the claret grapes of the valleys north of the bay have distinctive character and quality; that there is nothing else "just as good" for their distinctive purposes, and that whoever has such grapes on resistant roots on responsive grape land is in possession of a producing enterprise which will have high value on the basis of income production so long as the human race shall have any liking for the pastimes of Noah.

Another Free-Trade Meteor.

The dazzling beauty of the free-trade agriculture of our ruling powers at Washington is apparently bursting forth in weekly coruscations. Two weeks ago it was a shipload of Russian butter arriving with due regard to the administration schedule of open ports, but unfortunately before a Congress, with a certain unexpected element of rebellious conscience, could batter down the gates. Last week it was cargoes of South American beef, also arriving as per schedule, but which had to pay duties, in spite of administration tears at Washington. This week the beautiful situation is a gleam nearer home. The report comes from Oxnard, Ventura county, that on September 26 the American Beet Sugar Company announced a reduction of 75 cents per ton in the price to be paid growers for beets in the 1914 season. The base price for the past two years for beets analyzing 15 per cent sugar has been $5 per ton, with an added allowance of 25 cents per ton for hauling. On the same base the price next year will be $4.50 per ton, with no hauling allowance. The increase of 30 cents per ton for each increase of 1 per cent in sugar will be in effect as before, and also a decrease of 25 cents per ton for each 1 per cent less than 15 per cent of sugar. For beets yielding twenty tons to the acre the reduction amounts to $15 per acre loss to the growers.

And what is this for? To give the people cheaper sugar? Not on your life. The sugar-cane industry of the South and the beet-sugar industry of Western States could easily have convinced Congress that cheap sugar for the people depends upon the extension of the home-grown sugar industries and will not come through dependence upon foreign production. But this demonstration availed nothing against the power of associated refiners of imported raw sugars added to the influence of the political interests of those who are committed to bunkoing the public with a picture show of the brotherhood of man, skillfully staged in the national capitol. And what will this unholy show cost California? Fifteen dollars per acre annually on all the beet growing land in the State!

When Greek Meets Greek.

If this tariff statesmanship were not so serious, it would surely be very amusing. Take the case of the Greek seedless raisins commonly called Zante currants. The tariff bill, which is expected to pass this week, knocks one cent a pound off the duty which they have been paying. They are in direct competition with the California raisin product, and the ground on which the advantage in competition is to be given to the Greeks is thus stated in the dispatches: "Senators Saulsbury of Delaware and Pittman of Nevada, both of whom have, they claim, many Greek constituents, opposed efforts for the California product. These Senators were backed by the Greek Minister. The State Department took a hand against the California industry on the demand of the Greek Minister." If this is not fake statesmanship, we do not know it at sight. It is purely a gratuitous claim on the part of the Senators that they desire to serve their Greek constituents. It is common experience that when foreigners become interested in American industries they are the most strenuous workers for protection against their old home products. While European government speakers were addressing the American Commission last summer, they always said that their pride in the success of their countrymen in America was always mingled with regret that they became such good Americans that they worked for protection against their home land products which could compete with their own. What foolishness, then, it is to claim that Senators with constituencies of foreign birth must dilute their Americanism to please such constituencies. These constituencies generally like their Americanism straight. And then the Greek Government taking a hand in American legislation to help the administration! If it were not such bad patriotism, it would really be a very good joke.

Why So Fierce for American Markets?

There is another aspect of this tariff matter which seems to escape notice, and that is the fact that European nations do not care for American markets so much for their present products as they do to have a new hook in the garments of their own best people so they can hold them back from emigration to build up America. They wish to say to these people: "Why do you wish to waste your money on travel and incur hardship when you can stay at home and make things for export to the New World?" They have not been able to say that hitherto, but how they will begin to shout it next week! The fact is, European nations have no considerable surplus food products to send to this country, but they hope to have, and that is what they wish a chance to work for. Take France, for instance, a country which has persistently striven for American markets for the last fifty years or more. A recent Consular Report says: "At present 2,320,000 persons are employed in agricultural pursuits in the whole of France, while in 1892 their number was a little over 3,000,000; in 1882, 3,500,000, and in 1862, 4,000,000. Thus in half a century agricultural labor has diminished 40 per cent, and by reason of the steady increase of agricultural production the employment of foreign labor has become a necessity. Every summer troops of foreign workmen may be seen passing through France offering their help to the farmers, who could not gather in their harvests unaided." Of course, France's loss of farming people is not due to emigration so much as to other causes which need not be discussed, but the situation of scarcity of farm labor is true all over Europe, from Austria to Ireland; and in most cases a prime cause is emigration to America, because here every crop which these people know can be produced and sold at higher prices than at home. And hitherto the only way to get the prices has been to produce the goods here. Now the hope of the world is to be realized: products can be made anywhere and sold here, and all the foreign governments can put on the taxes for their own purposes. Uncle Samuel! you were too easy: all the world now has you by the goatee!

Eight Per Cent Philanthropy.

Events are transpiring which show very clearly the noble philanthropy of American farm financing. It is telegraphed with some exultation from Topeka, Kansas, that a movement has been just started there to loan the farmers in ten counties in western Kansas, where the wheat crop failed this year, between 35,000 and 40,000 bushels of seed wheat. The Kansas Farmers' Seed Wheat Club was organized to raise the money necessary to buy the wheat. The farmers to whom the seed is loaned will give notes bearing 8 per cent interest for amounts equaling the value of the wheat received. The notes are to be paid August 1, 1914. The railroads have agreed to carry the seed wheat free in carload lots.

The only noble thing in the foregoing category is the railroad: everybody else gets a good rake-off: the railroad will get its next year—but never mind that now. Now suppose that loss of crop and lack of seed had happened in France, what would have been done? Well, we disparaged France a little, perhaps, in a preceding column, so we will even up. The fact is that the French Government, through its Ministry of Agriculture and the Credit Agricole, would have furnished that seed without any interest at all, and would have made loans of money to put in the crop and to feed the people until next harvest at 2 per cent. Anywhere in Europe, money for seed would be furnished by the local credit societies at 3 to 4 per cent, and, under the circumstances, many other countries would do as well as the French method which we have described. But Kansas philanthropy is more exalted: it operates at 8 per cent. And these philanthropists say: "American farmers want no charity: they do not want less than the ruling rate." Possibly they like to be robbed under the name of kindness.

Funny Farm for Funny People.

It is some time since we have broken out in protest against starting farms to be operated by people who are not good for anything else, as though farming was the easiest thing in the world to operate for livelihood. Farming requires strong muscular action and shrewd thinking. For the best results, these must be properly correlated: for passable results they may be off-balance somewhat, and one can pull through to the extent of a living by overworking his hands and resting his head, or vice versa; but we have no faith at all in farming by human trunks with neither good heads nor strong arms. And yet that seems to be what the State of California has in mind when it proposes to have all the drunkards and drug fiends now confined in State hospitals transferred to Napa Hospital and from there detailed to work the Frye ranch of 2200 acres near Yountville, which the State bought but never utilized as a reformatory for first offenders. The idea seems to be that the State will make money by this scheme as well as benefit the inebriates. If the scheme is that the State can board and clothe these derelicts cheaper on this farm than it can at the asylums, we have no opinion of it, for we do not know the asylum cost. But if they do require guarding and discipline, then the farm becomes an asylum and no farming computations apply to it. If it is planned to escape asylum costs and the projectors expect a farm manager to make a farm profitable with such a labor supply, the whole thing is a bad dream.

An Adam-full Eden.

And now, if we can only stop scolding a minute, we have something pleasanter to contemplate. We read of the organization in Bristol, England, of the "Ladies' Co-Operative Farming Society, Limited, of Canada," under the Industrial and Provident Societies Act of England. The society is to establish a co-operative farming colony in the province of Alta, upon which women from England, Ireland, and Scotland will be located on the land to do dairying, poultry keeping, and produce gardening. The promoter of this enterprise seems to be proceeding upon the basis of a demonstration of its feasibility. During a recent tour of western Canada, he visited a farm of 80 acres, managed by a half dozen young women from England and Scotland. One had charge of the greenhouses. Another did the housework, and one looked after the poultry work. A Scotch girl opened a local store, and an English typist did all the clerical work. The sixth member of the colony attended to the cows, bees, and rabbits. The scheme worked out satisfactorily until four neighborly bachelor farmers carried off four of the girls within two weeks. The remaining two stayed a month, doing all the work, when they, too, met the same glad fate. The farm was sold and the profits divided equally among the six women. Such successful farming seems to be attractive. It is reasonably sure to be productive of population—the crop which Canada stands in greatest need of.

Queries and Replies.

Slowing-Down Blackberries.

To the Editor: I have quite a patch of blackberries—Himalayas, Mammoths, Dewberries, etc. They have plenty of water and the soil is extraordinarily rich, and of course they are making a most riotous growth. Shall I keep them growing until frost comes and prune them back in the winter, or shut off their supplies now and give them a rest or vacation? My view is, keep them growing and the extra canes thus grown will all bear fruit next year, as the soil is so rich. What's your view?—G. P. C., Lincoln.

We would slow them down. If your soil is retentive as well as rich, it probably has plenty of moisture to enable the plant to ripen its wood without shrinking too much. If it is too sandy, you may have to use a little water next month unless rains come. But do not push the growth farther for fear that a sharp frost may catch too soft wood. After the wood is mature, you will probably do well to shorten the canes somewhat, removing the thin extensions so as to start fruiting laterals from a good thickness of cane. Don't try to get all the fruit you possibly can. It is better for you and for the plant to bear a less number of larger and better fruits. And though the number be less, the weight and value thereof will probably be greater.

Asks for a Sign About Cactus.

To the Editor: With all the stir that is being created over spineless cactus, there should be at this time some reliable information, from practical experiments in feeding, as to the value of this plant as cow feed. Can you give any information?—E. C., Escondido.

We have already given in the PACIFIC RURAL PRESS of January 25, and June 7, 1913, such results of feeding cactus as a man needs to induce him to make a moderate trial of it for himself, to determine how much growth he can get on his land and to what advantage he can feed it to animals of different kinds. Cactus is no universal blessing, nor is any other simple plant in the world. Every plant becomes good, indifferent or bad agriculturally, according to its behavior in any particular place and with any particular man. Enough has been demonstrated to attract attention. The common experience of farmers and feeders must do the rest. If you are curious about cactus, try it. There is no sign but the sign of the prophet Jonah.

Sorghum Silage Not Poisonous.

To the Editor: Would there be any danger of prussic acid poisoning in feeding ensilage made from Shallu (Egyptian wheat)? If I should mix with corn in filling the silo, would I lessen the danger?—F. M., Gilroy.

Shallu should not be called "Egyptian wheat": there is no wheat about it. It may be called "Egyptian corn," if you like, because sorghum in Egypt has been called "corn" ever since the translators put the story of Joseph's corner in it into English. Sorghum has been largely siloed and has never been found poisonous in that form. Sorghum silage is about the same as Indian corn silage in feeding value, but it is harder to make because more apt to ferment and go to the bad by that route, and this fact is additional surety that the poison found in rank growth of sorghum could not exist in the silage. This poison is very evanescent: it disappears when sorghum is cut and wilted in the sun before feeding. It is practically sure that the incipient fermentation which takes place in good silage would break up the complex organic compound which is poisonous.

Which Vetch Is Best?

To the Editor: I want to grow a cover crop in my orchard and am informed that there are different kinds of vetch that are adapted to different soils. The soil is black gravelly loam. Can you inform me: (a) what kind would be best, (b) where I can get it, and (c) how many pounds to sow per acre?—J. G. R., Geyserville.

We have said several times that we do not know yet which is the best vetch for different conditions in this State. There has not been careful correlation of experience to determine that. We are strongly of the opinion that for the coast district north (which you are in) you will get most growth with the Oregon vetch, which you can get from all seedsmen who advertise in our columns. You can broadcast about 80 pounds to the acre or drill in about 60 pounds. Oregon vetch is another name for common or spring vetch, but in this State it should be sown in the fall.

Nitrate for Potted Plants.

To the Editor: In using the nitrate of soda in a liquid form, is the formula one-fourth of an ounce to a quart or a gallon of water? I want something to make potted begonias grow and the nitrate of soda in liquid form was recommended. D. B., San Jose.

A common prescription for the use of nitrate of soda for the forcing of flowering plants is a teaspoonful to three gallons of water. Manifestly the prescription which you have should read one-fourth of an ounce to a gallon of water and not to a quart thereof. If a very weak solution is used, it may be quite freely applied, but there is danger of killing a plant with a strong solution.

THIS HELPS CALIFORNIA.

Experiments at Wisconsin indicate that late breeding of heifers to get good size is a profitable plan. At all events it was shown that large cows were more profitable than small ones. Cows 900 pounds and under returned products worth $54.20 more than the feed eaten. The increase from the weight was steady until cows over 1400 pounds returned profits of $88.01. There are large cows and large cows, of course, and the above should not be reflection on breeds either. An authority on dairy matters in this connection states: "The large animals of any breed are much more economical of labor and barn room and usually give as much or more milk for the food eaten." Since California raised cows are usually larger than those raised where winters are severe, this indicates that California has size as an advantage in dairying.

How to Buy Fertilizers.

[By Our Associate Editor.]

It almost goes without saying that the best way of buying fertilizer is something which the ordinary man knows very little about. This is true for a number of reasons. In the first place, it is a very difficult thing to tell just what fertilizers should be used under any conditions, and in the second place, fertilizer materials are of so many sorts and are found in so many combinations that it is impossible to get a method of calculating that will be good under all conditions, or that the average man will use. The buyer gets his "fruit" or "grain grower," or his "nursery stock," without thinking just what is in it and without figuring whether the charge is correct or not. In a way this does no special harm, and the price is generally close to what it should be, if the goods come from a reputable concern, but it is clear that it would be better if every purchaser knew what he was buying, why he was buying just that thing, and how that price corresponded with the best price to be quoted.

In fact, a special arm of the State government has been established to see that the buyer can get fertilizers of the kind he wants and at legitimate prices, and if the State will provide government aid to help in fertilizer buying, it is funny if a buyer cannot profit from a little study of the matter. Special bulletins on commercial fertilizers are issued by the Fertilizer Control through the University of California at regular intervals, and for an insight into the matter it would be well for everyone interested to get one of these bulletins and see just how much information it gives. The Fertilizer Control has as its main work to see that all fertilizer sold is composed of the right material and comes up to the standard stated on the package.

Simplicity Difficult.—From the composition of any fertilizer that a man can buy in California it is possible in theory to figure out just about what the charge should be, though there are reasons why this is not as simple as one would think.

In the first place, a fertilizer may have three entirely different plant foods in it: potash, phosphoric acid, and nitrogen, which cannot be substituted one for the other, have entirely different actions in plant life and widely different values. In the second place, there are many different forms of each of these materials, of different price and value. Potash in the classification may be as either sulphate or chloride; phosphoric acid from tankage, bone, bone superphosphate, rock superphosphate and Thomas phosphate powder; nitrogen from blood, tankage and bone, ammonia sulphate and nitrate of soda (or lime), etc. Then the phosphate may be available or total, and all in various combinations with themselves and with each other. There are also allowances to be made for shipping and handling costs, cost of mixing, and so on.

And yet it is quite simple to figure out approximately the correct price of every ton of fertilizer sold from the statement on the sacks of every package; the little arithmetic it takes should not bother anybody.

How Classified.—There is a table of prices in the bulletin which can be applied to every guaranteed analysis on the sack. The prices in the last bulletin, issued just a year ago, were as follows:

	Cents per lb.	Value per unit.
Nitrogen from blood	22.5	$4.50
From tankage and bone	21.5	4.30
From ammonia sulphate	18.4	3.68
From nitrate of soda	15.4	3.08
Phosphoric acid from tankage	3.6	0.72
From bone	4.5	0.90
From bone superphosphate	5.0	1.00
Available from rock superphosphate	4.7	0.94
From Thomas Powder	4.2	0.84
Potash from sulphate of potash	5.7	1.14
From muriate (chloride)	4.9	0.98

It is just as easy to figure out what the value of any fertilizer is (according to that table) as anything could be. For example, on the sack will be printed the percentage of nitrogen, phosphoric acid and potash from this, that or the other thing, or in such and such a form. That will tell how many pounds per ton, so multiply each by the value given to it, add the different results together, and you have the total cost.

How to Figure.—Now, if a person wants to figure at all, he can figure quickest by the percentage basis, and in doing so he uses the last column. A unit simply means 1% of a ton. If there is 8% potash from the sulphate, the buyer would look and see that each per cent was worth $1.14 and would multiply this by 8, giving potash worth $9.12 in each ton, and so on for the rest of it.

For a definite example, we will take a fertilizer put up by one of the leading manufacturers entitled "Special Orange Fertilizer," guaranteed analysis of 10% phosphoric acid from bone and superphosphate, 6% of which are soluble and available, 2½% nitrogen from blood, bones, etc., 2½% nitrogen from nitrate of soda, and 3% potash from sulphate. Some of these classes are grouped together and this makes the figuring a little indefinite, but that doesn't matter much.

The phosphorus from bone and from superphosphate are valued at about the same, that is, 90 and 94 cents per unit, or per cent, and since there are 10% guaranteed, the phosphoric acid would be worth between $9 and $9.40 per ton. The nitrogen probably is largely from bone and tankage. This gives 2½ times $4.30 or $10.75 as the value of the nitrogen. The 3% potash at $1.14 for each per cent is quickly seen to be worth $3.42, the calculated value for the whole being just about $23.50. As a matter of fact, the price would be more than this, owing to the way that this table is made up.

These prices of $4.50 per unit for nitrogen in blood, etc., are generally manufacturer's prices. There is freight to pay and selling charges that will make the price of the fertilizer quite a bit more than what such figuring would make it. For example, two very simple mixed fertilizers figure out a value of $36.40 and $20.20 by guaranteed analysis. Their selling price was $39.25 and $22.25 per ton, which is nearer the calculated value than could usually be expected, as these were rather simple fertilizers.

Just about the best way to do is to get prices of various fertilizers of about the composition desired, figure out what each should be worth according to composition, and they buy the one that comes nearest the calculated price. Cost of materials may go up or down, some manufacturers may put in more of a surplus above guarantee than do others, etc., so no fixed basis of figuring will come true, but as a general rule it can be said that a man can tell pretty closely how near the price quoted was to what it should be by figuring out the composition price of several and getting the one, provided the manufacturer of it has a reputation to sustain, where the theoretical price was nearest the actual price.

Costs and Value.—Now we might just about as well tear up everything we have written about fertilizer buying if the price is to be the only thing considered, for with reputable fertilizer manufacturers the best price for the things sold will be given, or close to it. The whole aim of every fruit grower, or other person who uses fertilizers, should be to get the fertilizer that contains the best material for his purpose. This or that "fruit grower" or "nursery stock" may be just the combination he wants, and again it may not be. The proposition to have in mind is always, "What materials do I need, potash, phosphorus, or nitrogen, and in what form?" That is where scientific buying counts, though of course it is very hard to tell just what materials give the best results, especially with trees. With field crops it is much simpler.

If, for example, the grower finds that superphosphate provides the kind of phosphoric acid that is best for him, he should not buy fertilizer with a lot of phosphorus from bone and tankage. If he discovers that his soil is very rich in potash and that potash applications are ineffective, he should cut out that material, or if the contrary is the case, he should go strong on that in his fertilizer. The same thing is true with nitrogen. The essential thing is to make the choice of fertilizer with the materials desired and to know that the price is right, and that is all what this figuring is about.

And in case a person gets too infatuated with the figuring, great emphasis should be laid on the difference between value and cost. Nitrogen in one form might cost lots more than in another, and even where nitrogen was needed, not be worth as much. In other cases a person would make a mistake to substitute potash for phosphoric acid, or vice versa, etc. Very few illustrations can be given of this now.

Nitrogen as nitrate is much better just at the blossoming season than the other forms, and yet is much cheaper, while under many other conditions the other forms might be approved. If no cover crop is grown, the chances for bone or tankage phosphorus are better than for superphosphate, though the nature of the soil influences conditions also. Superphosphate from rock is about as valuable as from bone, and superphosphate is possibly the best thing to use where legumes are grown as a cover crop. Sometimes nitrate of lime would be possible, while nitrate of soda would be dangerous; the same thing is true with sulphate and muriate of potash. All of these have a great deal to do with actual value, and the question of comparative price is very small. There are so many factors aside from price that effect fertilizer buying that there is no use trying to cover the subject.

How much good a method of calculating the value of a fertilizer may prove, we cannot say, but always it is wise to know just what one is buying, and on fertilizer sacks the guarantee is usually printed, so it is easy to tell. The State also has especially provided a method for discovering what any fertilizer contains and what its approximate price should be, and publishes bulletins giving data on the subject. It would seem very wise to learn what one was buying, what the soil needed, and then how to make the best and most economical selection of materials from the several forms of the three great plant foods, each of great value for its own special service.

THE HOME OF THE FLAMING TOKAY.

(Continued From Page 313.)

of the picking season, or the leeway offered in time of picking. If pears, apricots and what not are ready to pick, off they go, and they have to be handled in a hurry, too, or they are ruined.

When grapes are ripe they can be picked, or they can stay on the vine for a while till the market improves or labor is available, and then be picked, and will not deteriorate. The fact that Tokays can be picked and shipped for nearly two months in one vicinity shows something of this. Of course, there is not this leeway with individual bunches, as most table grapes have what is called a first and a second crop, which actually ripen within a short time of each other and are of approximately the same quality, and in some soils and locations a variety will be earlier than in another. Generally Tokay vines are picked over three times.

Weather Effects.—The attitude toward rains seems very interesting to a fruit man from another section. The ideal plan for the Lodi section would be to have a big sprinkling system up skyward from which rains could be provided in time, quality and location to suit. In fact, that would be the ideal plan for farmers everywhere, and even then each crop and each patch of land would need its own style of rain.

The proposition is this. A little rain after the greater part of the grapes are off is looked upon as excellent, for it does no special harm to the varieties for which it is desired, and does lots of good, as it sizes up small berries and improves color. At the same time, the rain must not be too heavy, or it will crack and spoil the grapes. It must come just at the desired time and in the right amount. Some varieties, in fact (the later kinds), are not bothered by rain, and in a good season picking and shipping can be continued almost to the end of November. In fact, frosts are the limiting factor, as the end of the shipping season is determined by the time that the first heavy frosts come. To be ideal, both moisture and temperature should be made to order.

Packing and Shipping.—The packing of grapes

is much simpler than most fruits. They are packed in these small, square boxes, weighing when filled about 7½ pounds. Four of these go to make up a crate, which weighs packed approximately 32 pounds. The grapes are just laid in and finished with bunches that will fit well on top and make a good showing. This is much quicker than wrapping and laying in fruits one by one, as is the case with oranges, apples, and most fruits. The packing is done by women and girls, or by Japanese, provided the latter own the grapes. The crates themselves (or rather shook for them) cost 8⅓ cents or so, and grapes can be taken from the vine, crated and loaded into cars for a total cost of approximately 32 cents. As the packers work they look over carefully every bunch and cut off every sunburned, dried, cracked, or otherwise discolored or injured berry. The culls are sold to the wineries for brandy, the price varying with the year and being from $4 to $6.

A Grower's Mistake.—A common mistake of the growers, and one that should be remedied, is to do too little culling in the vineyard. Now, every bunch may possibly have a berry or so that had better be removed, though lots of bunches need no altering at all, but a great deal of labor in the packing-house could be saved if the culling were done in the vineyard, that is, if bunches hopelessly disqualified were not put in and some of the most easily removed spoiled grapes were taken off. This would be done if every man packed his own grapes, but each one thinks: "Oh, well, other fellows don't cull, and I don't want to take up my pickers' time when the packers will be culling other grapes anyway."

Not only is the cost of culling greater in the packing-house, but broken and spoiled grapes are dangerous to others, and the sound grapes would hold up better for long shipment if they were not touched by juice between vineyard and packing-shed. It also might be an improvement if all the packing were done at the cars. In a way, it is simpler to pack at the vineyard and in a way it is better. A large percentage of the grapes are so packed. But on the other hand, each grower has his own standard of packing, and the buyer of a car of grapes, or a bidder on a lot, never knows what he is getting in buying a lot of vineyard-packed grapes, while he does know, if he buys grapes packed by a reliable house, just about what he can expect. This element of uncertainty regarding the vineyard pack is said to make vineyard-packed crates worth about 10 cents less on an average than equally good house-packed grapes.

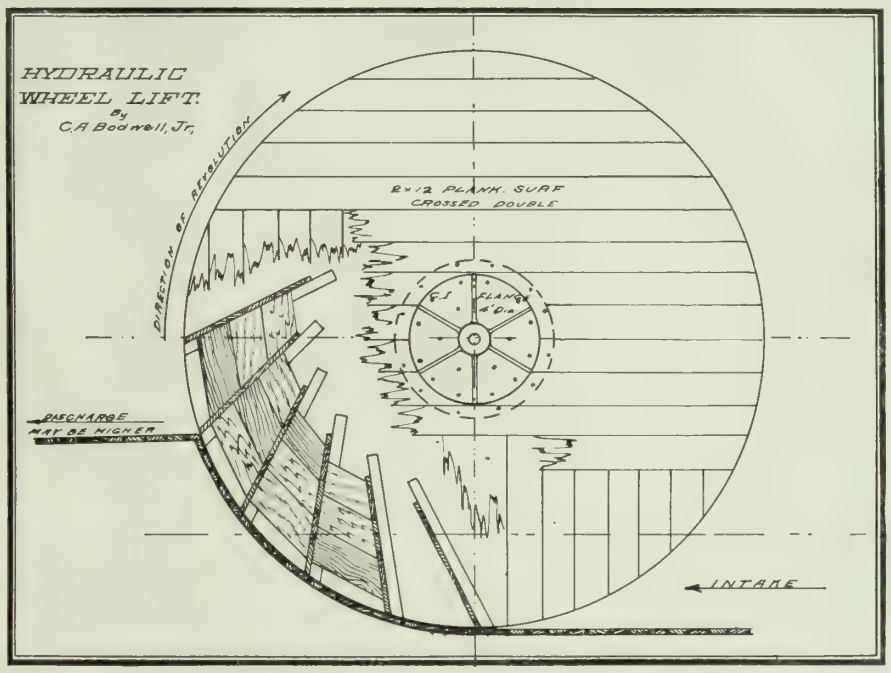
Present Profits.—The market for Tokays is good this year, though the grapes may average slightly below par in quality. They are worth about 75c. f.o.b. Lodi—certainly 65c. Of this, 32c. would go for cost of picking and packing, leaving 33c. per crate as the value of grapes on the vine. There are 65 crates to the ton, which would make merchantable berries worth $21.45 per ton on the vine, which is big money. Of course, lots of vineyards, through the two dry years, are bearing small crops, but some growers, without irrigation, have big yields, for the Tokay is a very vigorous grower and bearer. Drouth has reduced leaf surface on some vineyards and thus caused sunburn. Furthermore, the weather has been a little uneven, which has made a rather poorer berry than where growing conditions have been uniform, and likewise the color is poorer than usual, owing to warmer, drier nights. The grapes are, however, a thing of beauty and are nice and sweet, so that every consumer will be greatly pleased, and the price which they are bringing shows their merits and value. If the crop was big and standard high as could be desired, the profits might not be as good.

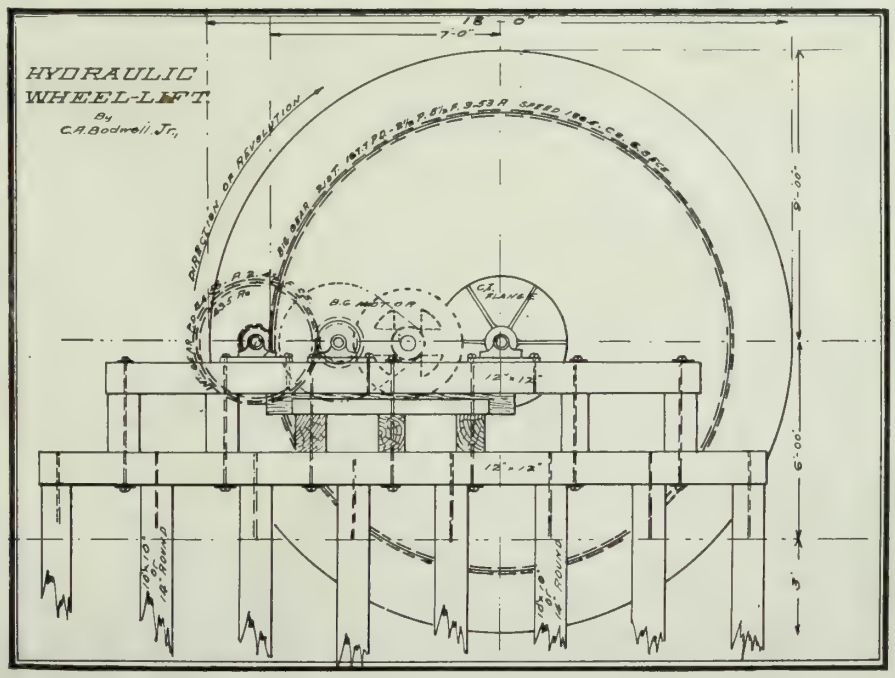
The cost of caring for a vineyard is from $10 to $12 per year, and a good, well-cared-for vineyard can produce 5 to 10 tons per acre or more. Where the profits come when prices are anything like this year, or other years that have made Lodi famous, can easily be seen. These Tokays have brought fame and fortune to growers and the district, and while civilization endures will be one of our most noted crops. As the market is educated, more will be used all the time; but we do not want to get enthusiastic over it, nevertheless, but rest on our oars a bit, give the best possible pack, and increase plantings only as the markets develop.

Water Wheel Lifts in Reclamation, Drainage, Irrigation, Etc.

[Written for the PACIFIC RURAL PRESS by C. A. BODWELL, JR.]

Among the earliest mechanical devices which man invented for his use in the arts of peace, were machines for lifting water. We read of the Egyptians and Assyrians having used appliances such as wheels moved by the current of a river, or similar wheels moved by man power, to the rims of which buckets were attached and which dipped water from the stream to discharge it into a small flume just below the upper periphery. The first pumping appliance in which valves were used seem to have been about the beginning of the Christian era. According to our present day understanding of the word pump, it is not likely that we would call these devices by this name.





The word indicates to the average mind an apparatus with a handle on it, which we as boys had to work up and down while water ran out of a spout. This, too, when often, in all juvenile ideas of justice, we should have been either off fishing or in swimming. Others know the word to mean one of those queer looking assemblages of cast iron cylinders, air chambers, piston rods, etc., on the inside of which there is heard the clicking of valves, and the regular beat of some invisible effort. The almost animate pulsating thing in a mysterious way sucks up and swallows water at one end, to pour it out the other from an open pipe at a higher elevation.

Also there are those involute iron casings with a shaft through them, on the end of which there is a pulley and over this runs a rapidly moving belt. It revolves something inside the casing, for there is a rythmic hum indicative of action and a sense of life, while water is spouting in a steady stream from the discharge pipe.

These are very different from the almost forgotten appliances of semi-civilization. These are pumps.

Types of Pumps.—We have plunger and piston pumps for all purposes, for suction and force work of all kinds. They range from the simple hand apparatus to the beautifully made Reidler type with mechanically operated valves. There are rotary and centrifugal pumps, Chinese pumps, ejectors, jet lifters, pulsometers, air lifts, wheel lifts, hydraulic rams, so called syphon rams, etc. There are subdivisional types of each kind, and differing general details of each type. Each detailed type is adapted to some particular location for some certain work better than any of the other types would be, or better than it would be itself in any other place and under any other conditions.

Selection of Type.—Thus, if it were desired to go down in the depths of a mine and install a pump to force water to the surface, against a pressure of many hundred pounds to the square inch, selection would be made of one of the multiple cylinder or compound plunger types, which would be operated by the best available power. If, on the other hand, it were required to handle a large quantity of water through a moderate elevation, it would be utterly impossible to speed

(*Continued on Page 325.*)

Forest Fires and Forest Reserves.

To the Editor: During the recent period of drouth and high winds, when disastrous forest and brush fires were prevalent throughout California, many demands for assistance outside of the National Forests were made on the office of the United States Forest Service in San Francisco by corporations and citizens whose property was threatened.

If, through your courtesy, the public could be informed of the position of the federal Forest Service on such appeals, the favor would be sincerely appreciated.

The President has set aside nineteen National Forests in California, and Congress has appropriated certain funds for their protection and development. The Forest Service, charged with this work, is not authorized to spend money (or the time of its officers, which is the same thing) in fighting fires outside the National Forests unless it becomes necessary to do so for the protection of the National Forests themselves.

When the protection of rural property is beyond the resources of the local residents, the towns, or the counties, the citizens must look to the State government for aid.

When a situation arises so serious as to be a public calamity, threatening life and property, any officer of any United States service is justified in employing whatever authority he may have or whatever means may be at his disposal toward restoring the situation to normal. Such was the case when the United States troops and the Forest Service co-operated to fight the fire on Mount Tamalpais, which threatened a thickly-populated residence district.

Within the National Forests a fire prevention and suppression system is maintained at an annual expense to the Government of from $140,000 to $250,000, depending on the severity of the season. The system comprises about 900 men in the field; 90 lookout stations equipped with fire-detecting and locating devices; over 3000 miles of Government-owned telephone line and connections, with an equal mileage of privately owned line; patrol stations; tool and supply caches; motorcycles and railway speeders, etc. It provides for the organization in advance of fires of all available volunteer help—some 10,000 men—and for their quick equipment, transportation, and immediate payment for services in case of fire.

This system has handled 1150 separate fires so far this season, 88% of which were discovered, reported, reached and extinguished before they reached ten acres in size. Since September 1 over 218 fires have been extinguished, four of which reached serious proportions, or over 1000 acres each, eight more being between 100 and 1000 acres, and the remaining 206 held down below 100 acres.

Very businesslike terms of co-operative fire protection are offered by the Forest Service to owners of land within the National Forests. The writer would be very glad to explain these terms in detail to any land-owner whose property is so situated that it can be covered in this protection system.

PROMPT ACTION SAVES LOSS.—Seven thousand dollars a day for 15 working days in September, or a total of slightly over $105,000, is what the U. S. Forest Service has spent in this State to combat the forest-fire evil this fall. While this includes the salaries of the men in the regular Service organization, it is all chargeable to fire protection, as the efforts of the whole Forest Service force since the beginning of the abnormally dry spell have been concentrated on this line of work. In northern California a number of emergency patrolmen are employed which will cost the Forest Service $25 a day until it rains.

As a result of prompt organization to meet the fire emergency, the loss has been held at a minimum within the National Forests, while outside, throughout the State, many large and disastrous fires are reported.

San Francisco. COERT DU BOIS, District Forester.

LIME FOR ACRE.

To the Editor: I see in your paper that lime is a good fertilizer. Would like to know how much it will cost per acre, what kind of lime is used, and when it is best to put it on. Does it have to be pulverized, as it comes in lumps, and is it put on slaked or unslaked?—Mrs. C. F., Sunnyvale.

Lime is an excellent material to apply to soils when needed, though it is not a fertilizer in the ordinary sense of the word, like nitrate of soda, tankage, barnyard manure, etc., and your first sentence is therefore a little misleading. The lime applied to soils is not the ordinary lump lime which would have to be slaked before application. Agricultural lime is powdered and can be applied easily. A half a ton per acre is a good application, though 500 pounds might do. Would advise you to write to advertisers for prices, which are low enough to make it profitable to put on a good application wherever needed. A good way to apply it, by the way, is with a fertilizer drill or with a wheat drill with the hoes off. It can be applied at any time, though about the time the rains start is the best.

NITRATE OF LIME

Contains 13% Nitrogen—in the most available form. Is a powerful plant tonic and energizer, besides the 25 to 30% Soluble Lime which we give free.

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THE FERTILIZER HAWFERCO THAT DOUBLES THE DOLLARS

Cottontails, Cherry Roots and Christian Science.

To the Editor: Of all the inconsistent laws passed by the California legislature, this hunting license law has a nice rich aroma and stands in the foreground for inconsistencies. Take, for instance, the cottontail: although a clean littte fellow, as far as his choice of food is concerned, he has many vices, such as the barking of fruit trees and destroying garden truck. He is often forced to exist without water during the summer months and obtains his drink from the sap of fruit trees and juices of plants. He is hardly to blame, then, for obtaining moisture from these sources.

As Brother Etter has aptly shown us, even the skunks and other vermin can hunt cottontails, but the farmer, upon whose soil he is born, bred and nourished, and upon whose trees and truck he waxes fat, must take out a hunting license to hunt them upon his own soil during open season and let them alone during the closed season or take a chance of being haled into court or risk losing his reputation by being a law-breaker.

A dollar is a small and insignificant thing—almost filthy sometimes from being housed up in unkempt places and from its environments; but if this hunting-license dollar which is paid by the farmers alone were to be turned over to the various orphan asylums it could be converted into a comparatively clean dollar.

There are a few other California laws which have the same ill flavor, which may be mentioned later, but the hunting license law which compels the man who tills the soil and owns it, to breed rabbits and other pests upon it, to fatten the coyotes, skunks and other vermin which make the farmer lean, puts a ban upon decency and a privilege upon license and helps to keep the young element of farmers on the move toward the slums and away from the farm, brings disorder and indecorum.

PLUMS ON CHERRY STOCK.—Last spring I grafted several seedling cherry trees, putting one Hungarian and one Standard cherry scion on each. The Hungarian in each instance ran ahead of the cherry and made the strongest and best growth. I should think the cherry root would be better than almond or peach or plum root, being strong and long-lived.

ESCAPE FROM DRUNKENNESS.—Since hearing through the papers of Sam Leake's healing of alcoholism (extremitis), I would like to have you tell the farming people that such healings are not an uncommon factor in Christian regeneration, and I hereby solemnly testify that I gave up alcoholism and profanity nearly seven years ago through the Christian Science teaching that man is sustained by God in every right endeavor.

GEORGE PRENTISS KELLEY.

Edgewood, Placer county.

"FARM LIFE FINE FOR PITCHERS."

There is no pitcher better qualified to tell his fellow craftsmen how to succeed in their profession than Walter Johnson, the star of the Washington American league club. Johnson attributes his success to the following program of living:

"I was born on a farm and I loved the life. A good many ball players don't, but I do. When the baseball season is over I go back to our farm out in Kansas and work on the place right through the winter, just like any of the men. I get enough of the big towns and the bright lights during the summer, and I am glad to get back to the farm and do farm work just as soon as I can. And I always hate to come back East every spring to begin playing baseball again.

"I have often said, and no one has ever disputed me, that I work harder every winter than any other ball player. The result is that in the spring I am just as hard as I was in the autumn. Instead of harging around hotels and pool rooms in som big city, I am out on the farm, getting up every morning before daylight and going out to help feed the stock. Then I come back to the house for breakfast, have a good, healthy appetite and eat accordingly.

"After that there is a lot more of work to be done around the place. I put in a good day every day in the week, and by the time night comes I am ready to turn in early, for I know that the next morning I must get up just as early and start out again, lantern in hand, sometimes with the thermometer way down below zero, for we have it cold out our way lots of times during the winter. I don't do it so much because I have to, but because I like to. I have not run across any ball players with whom I would swap places during the off season."

Grow Mushrooms

Big profits—little work, no trouble. Anyone can grow them. Plant spawn now—first crop in six weeks. You can sell more than you can grow. You always get big prices. We teach you how. Free—furnish you with the celebrated ARNDT PURE CULTURE SPAWN guaranteed to grow. Write for interesting booklet.

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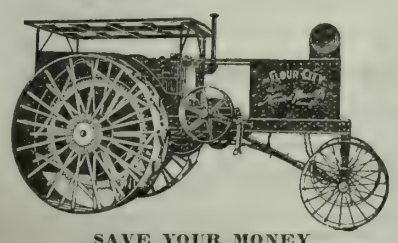

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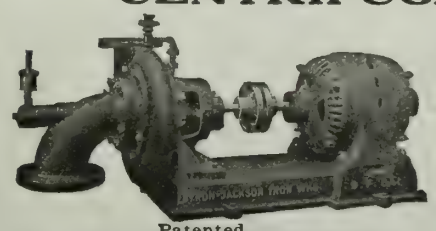

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The Government and the Farmer.

We have previously made reference to the declarations of President Wilson as to the attitude of his administration toward the farmers, and the declarations of Secretary of the Interior Franklin K. Lane as to the attitude of his department. From these declarations as well as those of President Taft of the preceding administration, one must conclude that the United States has little to learn abroad about governmental appreciation of agriculture. To more definitely set forth the attitude of the present ruling house of Wilson et al, we take from an address of Secretary Lane before the Commonwealth Club of San Francisco these paragraphs:

THE PROBLEM OF LAND AND WATER.—The use to make of money is to use it; and the use to make of land is to use it; and the use to make of water is to use it; and the problem that we have to solve in this country is how to get men to give to the whole country the benefit of the resources that may be held in a single hand or in hands of a few, and we cannot do that arbitrarily. Men can't have what they are entitled to taken from them by sheer force of the strong arm. We must do it upon some philosophic basis and with reason behind us, because we have got to win the force and strength and the command of public opinion.

Now, I find on every reclamation project that we have that the greatest hindrance comes from the man who holds out of use land that should be divided, cut up into small tracts and put at the service of the community (Applause). I shall try to solve that problem by placing burdens upon that kind of men which are not to be borne by men who are honestly attempting to make homes; so that men shall have pay to the Government of the United States more promptly their payment for water that we furnish to them if they do not use that water than they would if they did use that water (Applause). And so it is with the problem of the water power. The question is still undetermined as to what control Congress has over this question of water as to whether all the water that falls into the State does not belong to that State. There is a claim advanced seriously by some of our States, and ably upheld in argument, that all the water that falls within a State belongs to it, regardless of the condition that would result in the neighborhood if all that water was appropriated by the State.

ON WHAT TERMS.—I come against the problem as to what terms public land shall be allowed to be used for reservoir sites on and for damsites, and I am trying to adapt that same philosophy to the water question, that primarily the body of that water must be used, that you cannot take a stream that is capable of producing 100,000 horsepower and by appropriation and by a partial use keep the public from the benefit of the full hundred thousand horsepower, and impose upon those people who ask for that river or ask for that dam site an obligation to develop to the highest the water power in that stream.

PIONEERS.—Four weeks ago I was in Wyoming upon an irrigation project where they told me that last year the average growth per acre was $11, out of which the Government asked $1.50. And one after another of those men rose in the meeting and told me of the struggle that they were having in making homes for themselves. One young fellow said that he had five acres. He rose at three o'clock in the morning; he worked until seven; at seven he went to work for a neighbor; he stayed at work with him until six; he had his supper and he went to work again and he worked until eleven o'clock. Another man, with ten acres, said that he was milking eight cows and keeping two horses upon those ten acres of land. Another man, with forty acres, told me of the struggle that he had had with a piece of sandy soil, had poured water onto it until it had twenty acre feet of water on that land, and had not been able to raise a single crop of alfalfa; but his heart was still full of hopes. He had turned over the sand in his front yard and laid tarred paper a foot and a half below the surface of the soil, piled back the sand and put on water and raised his vegetables.

These are men who are working for us. These are the men who are doing the pioneering in the United States today.

TRIBUTE TO ENGINEERS.—The engineering work of the United States is unsurpassed. There is no greater tribute that can be paid to the American engineer than to say that he has built the dam that will hold the flood waters of the greatest river in the country. But we have been indifferent, too indifferent to the man who works upon the farm that is irrigated by the United States. We have been too indifferent to the man who works on every farm, and I am satisfied that there must come a movement in our time by

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FRENCH PRUNE,
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and all leading deciduous fruit trees grown without irrigation. Pure, clean, and hardy. Order early and secure the best.

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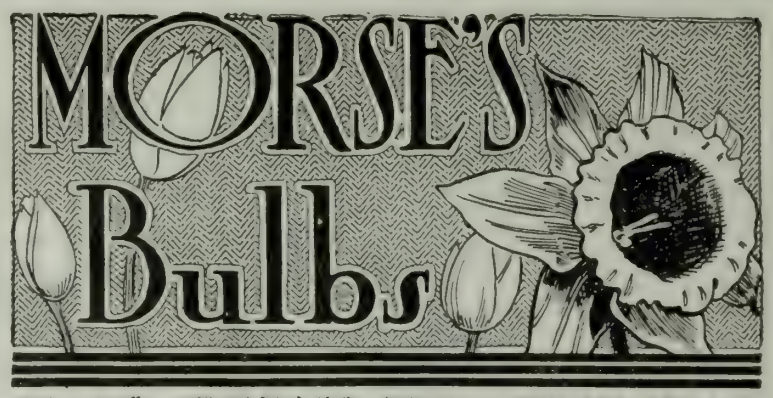

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which conditions will be made more tolerable not for that man alone but for the woman who is with him (Applause). They are the pioneers. I have been through the arid West where these farms are being laid out, dry farms and irrigated farms, and those men are having a battle with the soil that is just as real and just as splendid and calls for as much heroism as any battle that men ever fought upon a battlefield with guns (Applause).

Two Classes of Men.—There are two classes of men, Kipling says. He divides them into the sons of Mary and the sons of Martha. Mary pleased her Lord and He looked upon her with favor. Martha displeased Him because she was at work; and the sons of Martha have been working for the sons of Mary ever since. And the man that we must have regard for in our study of economic questions in this club, the man that the government should look to constantly and whose concerns should give the government concern, is that son of Martha who is struggling and striving to build the railroad, to build the irrigation ditch, to make the farm, to get metal out of the mountains, to drive ships across the sea, to explore in far-off Alaska, to drain the everglades of the south, to climb into places that are the highest, and find where men can make habitations for themselves. All our economic theories, my friends, must be controlled, curbed and limited by the human equation. There is no philosophy that you can lay down in the books or in your paper discussions before this club that solves any problem unless you consider first of all how men are going to live and what their ideals of living are: and if we are to have the United States filled from shore to shore with men who are independent American citizens, proud of that citizenship, loyal to their government, you must have conditions in the homes of the farmers of this country under which women will not work from four in the morning until nine and ten at night, and men can find that they can get some of the satisfaction that comes to men by mixing with their fellow men without abandoning their farms, where they are found and where they are trying to make a living for themselves as well as for us.

Problem of the Farmer.—I am talking to you seriously as a body of men interested in the larger questions of our country. In Europe they have in some way, in many ways, solved some of these problems, because they there find that men can live in villages and still go out to the farms to work, can keep their farms at some remote distances from their places of residence. In the United States outside of some of the Mormon settlements in Utah, that has not been found to be true. And I want to make some plea to you that you give consideration to the problem of the American farmer, as to how he is to become identified with you who live in the city and not feel a degree of bitterness against you. You see it—many of you do; I see it, and find that there is building up a great class feeling in the United States, and that feeling you say lies at the house of Have on the one side and the house of Want on the other, and in your mind you roughly say that means the labor unions or the laboring men on one side and the capitalistic class on the other. I say to you seriously that one of the problems that you must consider is the problem of the dissatisfaction of the man who lives in the country, and that there is as much danger of a philosophy developing on the part of the farmer that is antagonistic to the denizen of the city as that there is that laboring men will be opposed to the capitalist. Those men feel really that they have not had out of this country a square deal. They are willing to work, but they feel that an effort ought to be made to make their conditions more tolerable. Men on the farms in the United States pay ten and twelve per cent interest upon their money, when they want to buy a few cattle or some agricultural implements, and they say that the man in the city can get his money for five per cent, and what is the city man doing for them, what consideration do they give to them?

Now, my friends, this is the thought that I would leave with you: That this country is great; this country has a destiny that is unequalled, but that destiny can be worked out only by having in our minds constantly "the other fellow." That other fellow is the man upon whom we must lean; and don't try to solve your problems upon any theory unless you take into consideration the psychology of the man who has to work the farm, and the psychology of the man who has to sail the ship, and the psychology of the man who has to do the work in the machine shop or in the ground (Applause).

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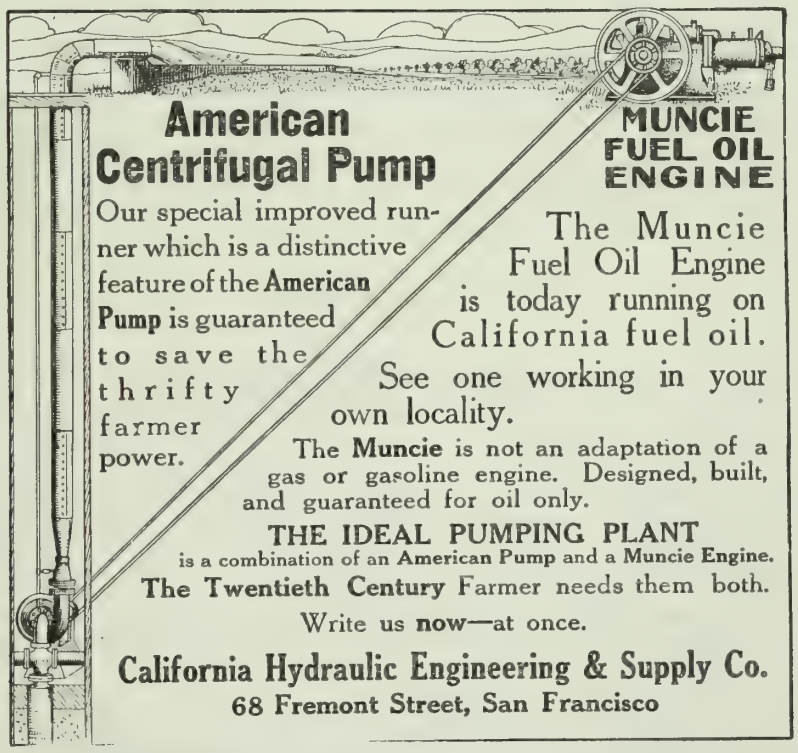

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See one working in your own locality.
The Muncie is not an adaptation of a gas or gasoline engine. Designed, built, and guaranteed for oil only.
THE IDEAL PUMPING PLANT
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Factory No. 1 price $130.00.
Capacity 2000 to 5000 daily.

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AGRICULTURAL REVIEW.

SECOND FAIR AT PLEASANTON.

Good sized crowds were in daily attendance at the second annual Alameda county fair held last week at Pleasanton. This year's show brought out a nice lot of exhibits in the Agricultural and Women's building, showing that the county is able to produce fine vegetables, fruits, etc., in an exceptionally dry year like the present one has been.

The management and visitors were disappointed this year in not having a poultry exhibit, due to the hard season that poultrymen have experienced. The livestock showing was well patronized by the different breeders, and while most divisions did not bring out any competition, the quality of the stock show was excellent. The horse divisions were entirely filled by local breeders, and in this respect it was a complete county fair.

T. S. Glide had his show herd of Shorthorns entered, having no competition. Prof. George of Davis, who did the judging, gave the young bull Greenwood King the grand and junior championship over the old bull Greenwood Knight. The N. H. Locke Co. were the only entrants in the Jersey classes and received all of the awards, as was the case with U. G. Stroder's Dutch Belted herd and Cartwright's herd of Red Polled. The home breeders had all of the Holstein entries, also the swine exhibited.

The sheep divisions brought out the only competition in the live stock divisions when T. S. Glide and Bishop Bros. flock came together. The following awards were made in the different classes: Bishop Bros., 2nd ram, under 1 year, 2nd ram under 2 years, 1st ewe 2 years or over, 1st and 2nd ewe under 2 years, 2nd pen of three ewes and one lamb. T. S. Glide, 1st ram under 1 year, 2nd ram under 2 years, 1st, 2nd and 3rd ewe under 1 year, 1st pen of three ewes and one lamb, grand champion ram and ewe.

W. J. Dakin, secretary of the Fair Association, stated that while the attendance had been very good it was considered best to have four days instead of five hereafter, as the best crowds always come the last four days.—J. C. L.

With the Live Stock Men.

Orvil Garlinghouse has just purchased 18 Holstein heifers and has installed them on his alfalfa ranch near Fairmead, Merced county. He will increase his herd to 40 cows for a starter. Mr. Garlinghouse will build a silo and also a modern dairy building with concrete floors and sanitary in every respect.

A band of cattle rustlers are said to be operating in the Contra Costa hills.

A 40-acre ranch near Willows, Glenn county, has been rented by J. M. Avilla for five years at a yearly rental of $1000. The new lessee will run a dairy.

N. E. Mullick and Frank B. Glenn of Jacinto, Glenn county, have returned home with 30 purebred Holstein cattle which they purchased in the southern part of the State.

Mr. Busse, in charge of the cheese factory at McArthur, Shasta county, reports that 170 pounds of full cream cheese is being turned out daily at that place at this time.

James W. McCord writes from Hanford: "Have seven jack colts out of ten, my Shire mares are ready for the fair with their colts, the raisins are all dry, and I think everybody is ready for the fair. There will be a good exhibit of local stock. Send someone down to Hanford to look after us."

I. G. Zumwalt and H. A. Marti, Colusa, are stocking up a dairy with high-grade Holsteins.

McKiernan Bros., cattlemen of the Tulare hills, have lost 18 steers recently, supposedly from poison. Other stockmen have suffered similar losses.

The Petaluma Co-operative Creamery Co. has purchased a new site for the erection of a creamery.

The Fallon, Nevada, creamery has been sold to the Churchill Creamery Co., which will import fine dairy stock from California and elsewhere to be sold to dairymen on easy terms.

The plan of obtaining a lot of cheap notoriety by introducing a bill to prevent the slaughter of beef calves has been worked again by a legislator at Washington.

Prices at the Portland Union Stockyards did not hold up as well last week as the week before. Prime steers sold at about 7.50 to 7.75, heifers 7.00, cows, 6.75, bulls 5.50 and calves 9.00. The hog market stood at from 7.50 to 8.50 or 8.70, sheep and lambs at 4.00 to 5.00 and 5.25.

The U. S. Department of Agriculture has issued a revised bulletin on medical milk commissions and certified milk.

W. W. Fisk of Davis, Yolo county, is on a visit East to purchase a herd of purebred Jerseys to establish a dairy on his home place.

The Western Meat Co. has purchased the plant of the Fresno Creamery.

The Gridley creamery reports an output of twice as much butter as was being made a year ago.

The State Dairy Bureau will send out within a few days requests for a statement of the output of every creamery in the State. Such a report is required by law and the earlier the replies come, the better figures on dairy output can be gotten up.

Joseph Fassler is shipping 600 gallons of market milk a day to San Francisco from his dairy near Lathrop. There are 750 acres on the place, about 230 of which are in subirrigated alfalfa. There are 350 grade Holstein cows kept.

The warning has again been sounded from the Master Butchers' Association in convention in Chicago that meat will soar out of sight in price soon unless a change in livestock methods is adopted. At the same time the wastefulness of housewives is blamed for much of the shortage.

The U. S. Government recently seized 80,000 cans of evaporated milk on the ground that it was labeled "evaporated cream."

A note from W. A. Young calls attention to the fact that in the notice of awards printed last week we omitted the first prize on boar under six months. This pig is a very fine one and Mr. Young expects to show him at the Panama-Pacific Exposition in 1915.

Fruit Notes.

Peach growers in the Fresno district are urging the California Associated Raisin Company to handle dried peaches, which a large proportion of the members produce. The matter will not be taken up by the company until the press of raisin business is over, but favorable action is expected.

The Boys and Girls Aid Society camp at Sebastopol has closed for the year once more. The boys picked 26,221 trays and 932 crates of Mammoth blackberries and 63,293 trays of Lawton blackberries, making in all a total of 235 tons of berries picked.

Carlos Cibarbourne, appointed by the government of Uruguay to study California fruit methods, and C. Lopez of Galicia, Spain, have been visiting the leading fruit districts of California.

Eighty per cent of a normal crop of oranges from San Bernardino county is predicted by County Horticultural Com-

"They Saved My Apricots During A Heavy Frost"

—is what J. E. Brown of Hollister, Cal., says about his

BOLTON ORCHARD HEATERS

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Simplest—most economical heater known. Costs less to install—maintain and operate. No cover or complicated mechanism to get out of order when time is valuable. One man can light one hundred heaters in five minutes. When not in use they store in small space—one fitting into the other. Write today for our book R. P. containing valuable orchard heating information.

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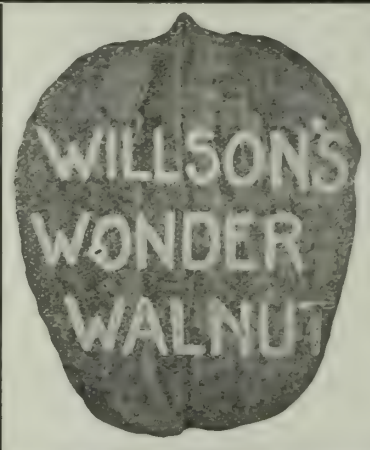

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THE EARLIEST HEAVY BEARER.—The original tree, now 12 years old, has borne 10 successive crops. Trees now 6 years old have borne 6 crops of nuts (7 years from grafting).

Large, Blight-Resistant, and Finest Quality.

Stock of trees limited. Write for prices.

ALSO GENUINE FRANQUETTE WALNUTS.
All stock grafted on California Black.

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SPECIAL ALFALFA DRILL

20 Discs 4 inches apart

On 33⅓ acres this drill will pay for itself in one season, in the saving of seed alone.

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SANITARY FERTILIZER

The only fertilizer made that is free of fats and oils, and is odorless.
25% cheaper.
Send for pamphlet and analysis.

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FARM BOOKS.

The following list of farm books are kept in stock and will be mailed on receipt of prices quoted:

Hog Book, Dawson	1.60
The Dairy Farm, Gurler	1.10
Greenhouse Management, Taft	1.50
Mushroom Culture, Falconer	1.00
The Study of Corn, Shoesmith	.50
The Hop, Myrick	1.50
Meadows and Pastures, Wing	1.50
Trees and California, Jepson	2.50
Asparagus Culture, Hexamer	.50
New Onion Culture, Greiner	.50
American Cattle Doctor, Dadd	1.00
Home Pork Making, Fulton	.50
Farm Gas Engines, Brate	1.10
The Book of Alfalfa, Coburn	$2.00
Swine in America, Coburn	2.50
Feeds and Feeding, Henry	2.25
Farm Development, Hays	2.00
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missioner S. A. Pease, after making a careful examination of conditions. This is the largest estimate yet and indicates that the farther the season advances the better conditions seem to be.

Experiments by Charles H. Kinkler of Visalia with dynamiting in his prune orchard have been very successful. Trees near which dynamiting was done early in the year are in much better condition than the average, and he will use dynamite in the rest of his orchard. The recent hot spell has been hard on Tulare county prunes and the crop is rather small this year.

Irrigation and Drainage.

The first step in the very important work of finding a suitable method of reclaiming alkali land in the southern half of the San Joaquin valley was taken in a contract let by the management of the Kearney ranch near Fresno for the reclamation by tile drainage of 160 acres in the ranch. This work will both serve to make productive this quarter section of fine land now nearly worthless and will be a practical demonstration by the University of California of drainage methods. All flat bids for the work were too high, and it will be done on a cost and percentage basis. J. B. Hill of Fresno is reclaiming 40 acres of alfalfa land from high ground-water in the same way. He will finally have 160 acres thus treated.

One of the largest individual land development enterprises in Glenn county is being started by Van Dunlap, who has recently purchased a section of land four miles north of Willows and will soon sink wells and plant the whole place to alfalfa.

The trustees of Porterville have passed an ordinance requiring all irrigation ditches in the city limits to be covered.

The directors of the Sacramento Valley Development Association have adopted a resolution calling upon Shasta county supervisors to make a survey of the Pit River and Big Valley irrigation project so that the benefits and costs of the project can be known with a fair degree of accuracy.

A large delegation of Oakley, Contra Costa county, farmers recently visited the Modesto and Turlock irrigation districts and came enthusiastic over the irrigation district planned for Oakley and vicinity.

News from Grape Growers.

The fight of the large Eastern wholesalers against the California Associated Raisin Company because it will not grant them special prices for large orders has evidently been given up, for wholesalers have ceased to buy only for current demands and have been buying freely. The company has recently advanced the price of 1912 Muscats to close to that of the 1913 crop, as wholesalers were said to have been selling them as 1913 raisins. The company has been having all of its seeding work done at Fresno.

The season for shipping Malagas from Kerman closed on September 26, two weeks earlier than in 1912, owing mostly to the hot weather of a short time ago. Malagas the packers could not handle have been bringing $10 from the wineries.

In the district between Merced and Tulare 46 wine gaugers were recently at work, with more to come. The season is now about at its height.

Sales of wine grapes are reported to have reached $25 and $28 per ton for the best quality of grapes at Healdsburg.

The winery of Geo. West & Son, Stockton, has been receiving grapes at the rate of 35 cars per day. The grape growers of northern San Joaquin county are getting about $20,000 a day from wineries and Eastern shipments of table grapes.

A price of $13 per ton for wine grapes in the big valley is predicted by E. L. Spellman of New York city. Mr. Spellman states that the demand for California wines is rapidly increasing.

The newly appointed State Board of Horticultural Commissioners is attempting to improve the market for California grapes in the East by improving the sugar content and quality of grapes shipped.

General Agriculture.

A club has been formed near Chico with the purpose of fighting Johnson grass.

The American Beet Sugar Company of Oxnard has announced a reduction of 75 cents per ton to be paid beet growers for the 1914 season, owing to the tariff cut. The new schedule will hold probably with all factories.

The plantings of the California Eucalyptus Company, near Tipton, Tulare county, having been ruined by the freeze of January, the land will be planted to alfalfa as soon as the dead trees have been removed.

John F. Raezer, an experienced rice grower of Texas and Louisiana, recently settled at Gridley, Butte county, and will go into rice growing on a large scale.

A considerable amount of alfalfa will be cut for seed purposes this year, according to Horticultural Commissioner Rutherford of Stanislaus county.

The latest estimate of cereal crops of the International Institute of Agriculture, Rome, give most cereals a slightly larger yield than in 1912, though corn, owing to bad weather in the corn belt of this country, is 22% less.

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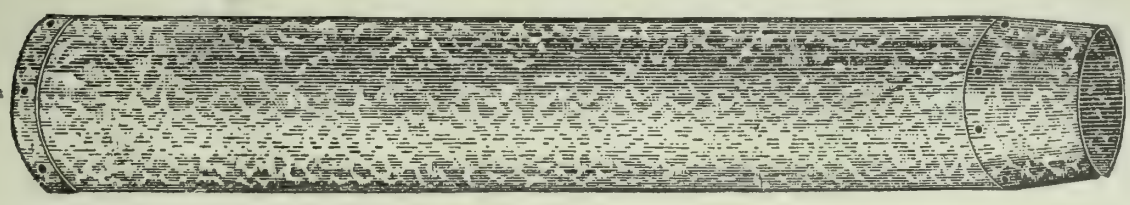

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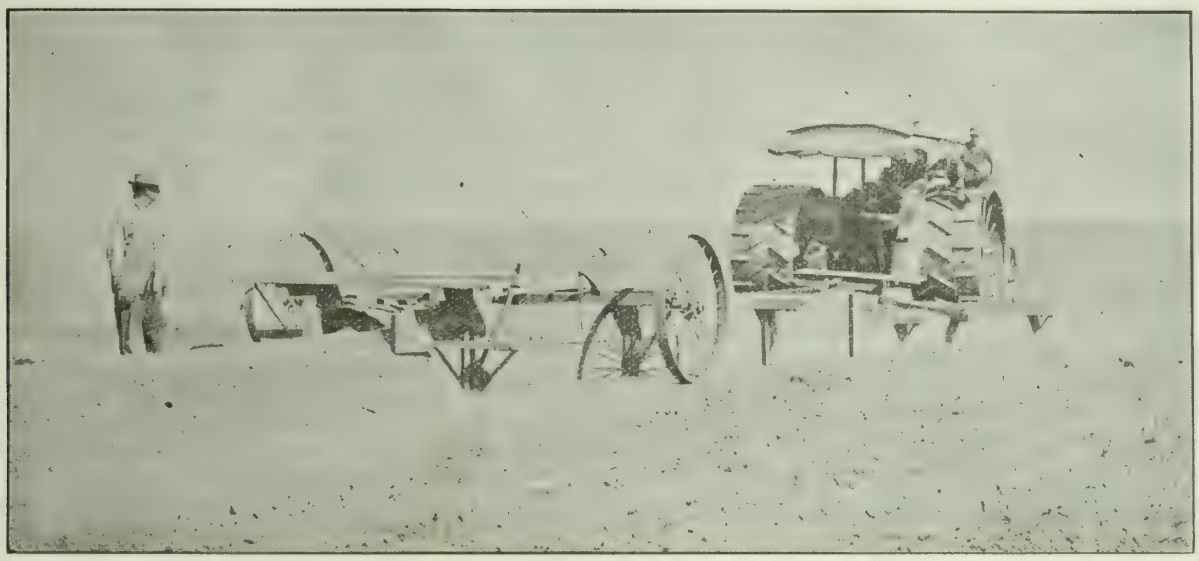

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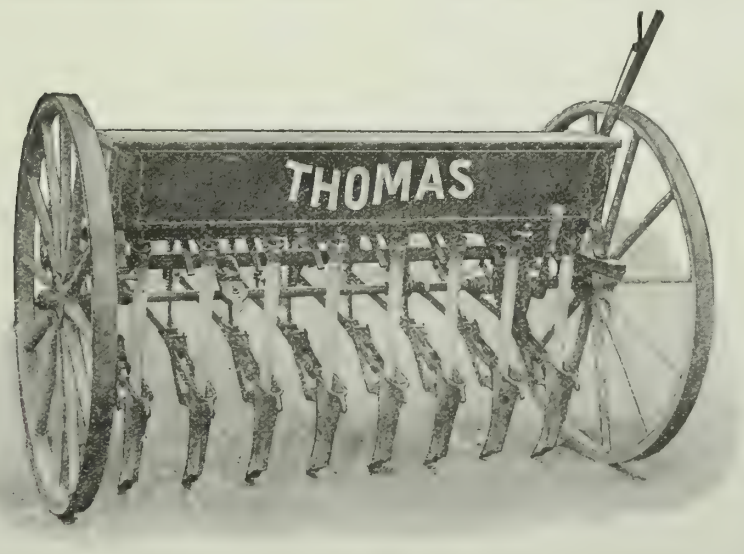

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Getting the Most from Hogs.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Almost any good farmer will tell you that it pays better to raise well-bred hogs than it does to fool with scrubs, and yet it is safe to say that the majority of hog raisers in the State are using what they call "almost thoroughbred sires."

It is doubtful whether those who pursue this method realize what they are losing by so doing, and what the cost would be to grade up their herd with a pure-bred sire.

Grading up does not mean crossing one scrub with another, but rather means the using of a pure-bred sire for the first cross and continuously crossing the female offspring with pure-bred sires of the breed first selected until the scrub blood is practically bred out. While it is true that the hog bred in this manner can never be recognized as a pure-bred, he is for all practical and commercial purposes the ideal hog for the farmer. In fact, the two last-named requirements are all that the hog raiser should consider, and it is this commercial end that makes pure-bred raising at all necessary from an economic standpoint.

When one takes into consideration that only a short time is necessary to grade up a scrub herd to over 98 per cent pure on the average, it seems strange that farmers do not avail themselves of the extra profits derived from such stock.

To exemplify the meaning, it may be well to show the improvement by years through using pure-bred sires on grade dams, which is:

Generations.	Sires Pct. of Pure Breed.	Dams Pct. of Pure Breed.	Offspring Pct. of Pure Breed.
1	100	....	50.00
2	100	50.00	75.00
3	100	75.00	87.50
4	100	87.50	93.75
5	100	93.75	96.87
6	100	96.87	98.44

It will be seen from the above that in six generations the offspring is practically full blood, and at the rate that hogs grow it is evident that only a short time is required to have a top-notch herd.

Some may reason that a good-looking individual, even though he be a scrub, is cheaper than a pure-bred pig at $30 or $40, but this has been proved an erroneous idea, because the pure-bred has been built up through generations by selection and the good-looking scrub is only a happenso and is apt not to be prepotent enough to warrant his use.

A few suggestions offered by a practical hog raiser of long experience may be of benefit in choosing the breeding stock. He says that a perfect hog should, when viewed from the back, front or sides, resemble a parallelogram as nearly as possible. Back, belly and sides should be straight and parallel, with ribs well sprung, head short and face dished, wide between eyes, full jowl, rounded at the sides, ears thin and soft, and neck short and arched. Legs wide apart to give plenty of room for lungs and heart. Avoid a swaying back and see that the hams are wide as the shoulders and drop square to the tail, well rounded to the stifle. Must stand well on toes and not down on claws. Above all, remember that the packer doesn't buy daylight, and the less of that seen between the hog's belly and the ground the better. Color does not bring price, either; and it doesn't matter whether it is black, red, or white—conformation is what counts.

The most important factor in the herd is the boar. In all instances use a pure-bred boar. Too much emphasis cannot be laid on this. Choose him from among the best, for the best is none too good. Have him from a family entirely foreign to your own. The inexperienced had better let inbreeding alone. See that he is well conformed, full of vitality and of good disposition. Avoid a long head, long neck and long legs. See that he stands well up on his toes. Don't buy a sway-back, nor one too arched; his back should be nearly straight. A little arch won't hurt, but must not be too pronounced. Don't use a 2 by 4 on him, for a light whip can handle any boar that has been properly trained. Keep him away from the sows until they need him. Use a crate for breeding purposes—it will save your boar's vitality. Don't put him in service too young; eight months of age is the earliest time he should be used, and ten months is better. Have him get accustomed to his new home and surroundings before he is put to work.

For a farmer to purchase pure-bred sires for a couple of years and then switch back to scrubs is suicidal, as it unjoints all of the progress made before. The use of a pure-bred sire purchased at the reasonable prices offered in this State is perhaps the one best bet for California farmers today, and should be more generally practiced, not only in building up the hog herd, but all other kinds of livestock as well.

OVERHEATING OF SILAGE.

To the Editor: What is the best method to use to prevent silage from overheating in cement silos, especially pea-vine silage?—C. B., San Leandro.

Answer by W. V. Cruess, University of California.

The rise in temperature in newly filled silos is largely due to the activity of anaerobic bacteria which destroy the soluble carbohydrates with the formation of acids and carbon dioxide. The heat results from the chemical reactions brought about by the bacteria. The larger the mass of the fermenting material, other things being equal, the higher will the temperature rise, because the larger the mass the less heat is lost. Consequently, it is usually advised in such cases to fill the silo a little at a time, allowing say 48 hours between charges for the fermentation to take place. Thus in the thin layers added in this way, fermentation proceeds and most of the heat is lost. On the other hand, if the silo is filled all at once, a great deal more of the heat of fermentation is retained.

I have appended a short discussion of the general principles of silage fermentation that you are welcome to use as you see fit. The whole silage fermentation problem is still more or less under discussion and dispute; the matter on the following sheets represents some of the latest and most approved views. You will find a good outline of the subject in Bulletin 70 of the Storrs Agricultural Experiment Station, Connecticut. It also contains a good bibliography.

Silage Fermentation.—The changes that take place in the silo after and during filling are brought about chiefly by the activities of microscopic organisms. Three groups of organisms are represented: molds, yeasts, and bacteria. Of these, the bacteria are the most important. Besides the changes brought about by bacteria, there is the respiration of the plant cells that goes on for a time after cutting.

It is probable that the first rise in temperature of silage is due to the activity of the plant cells, but it is also likely that this process does not play any great part in the formation of silage, because tests made at the Storrs Experiment Station, Connecticut, showed large numbers of bacteria in the silage 24 hours after it was put in the silo.

The main fermentation follows this preliminary rise in temperature. It is for the most part a conversion of the sugar into various organic acids and carbon dioxide. The amounts and kinds of acids formed varies a great deal in different silos and in the same silo in different years. This is because the changes are not due to any one kind of bacteria, but are brought about by a large number of different kinds working at the same time. It can be seen how one set of bacteria may predominate in one silo and another set in some other silo filled with the same material, because of some difference in conditions of filling, etc.

In general, the fermentations that take place in the silo are of two types: one requiring oxygen of the air while it is in progress, while the second and most important fermentation, or more strictly speaking, group of fermentations, take place best in the absence of air. The first is termed aerobic and the second anaerobic. The fermentation of silage is started by the aerobic organisms and is then carried on by the anaerobic types. The spoilage of the finished silage is due to the activities of aerobic organisms of the mold class, which are not represented in appreciable numbers in the first fermentation. Consequently the production of silage should aim to promote the proper preliminary aerobic and anaerobic fermentations and prevent the setting in of the destructive aerobic fermentation that takes place when the product of the first fermentations is exposed to the air.

Keeping Quality of Silage.—The keeping qualities of silage is in proportion to its acid content, and in this respect may be compared to sauerkraut or sour pickles of any sort. The organisms that form the bulk of the acid carry on their fermentations below 120°F. Therefore, it is of importance that the temperature should not rise too high in order that uniform results may be obtained. There are many cases reported where the temperature has risen to 155 to 160°F. in the silo during fermentation. These high temperatures kill the acid-forming bacteria and result in the formation of "sweet silage" in most cases. It is true that an acid fermentation may follow the fermentation producing the high temperature, but the desired results of producing an acid silage are more uniformly obtained if the temperature does not rise too high. The high temperatures are also objectionable because the fermentations that produce them destroy more of the food value of the silage than do the fermentations at lower temperatures.

It is claimed that excessive temperatures may be avoided by filling the silo slowly. This allows fermentation to take place in each layer of material placed in the silo before the next lot is introduced. In this way only a relatively thin layer is fermenting at any one time, and consequently the heat of fermentation is given a better opportunity to escape by radiation than it would if the silo were filled rapidly.

Changes in Silage.—The principal acids formed during fermentation of the sugar are: acetic, butyric, lactic, propionic, and valeric acids. Acetic acid is the acid of vinegar and lactic acid the acid found in sour milk. The rancid odor of silage is due to the presence of the butyric acid and is especially noticeable in beet silage. It is possible that the acetic acid is formed from alcohol by acetic acid bacteria and that the alcohol is produced by yeasts from the sugar. The other acids are probably formed from the sugar directly by lactic, butyric, etc., bacteria. Normal silage contains from one to two per cent of acid calculated as lactic acid; which would be, on an average, about 10 ounces of pure acid to 40 pounds of silage.

Besides the fermentation of the sugar, we have changes taking place in the proteins of the material used for silage. The proteins, of which egg white may be taken as a type, are broken down by bacterial activity into simpler compounds known as peptons and amino acids. In the fermentation of products high in sugar, the protein fermentation is of little consequence as regards the quality of the final silage; but in the case of materials low in sugar and high in protein, such as peas, the protein fermentation may play an important part. The bacteria, lacking sugar needed for energy in their development, will attack the protein vigorously and may form objectionably flavored compounds such as are found in any decomposing protein, and render the silage unpalatable to the stock. This fault is corrected by adding material high in sugar to the peas or beans as they go into the silo. For example, corn may be added; in California, fresh beet pulp, if available, might prove satisfactory in giving the desired sugar for acid formation to silage material lacking in sugar.

In summary, it may be stated that the changes taking place in the silo are due to fermentations brought about by microscopic organisms of the plant kingdom. The principal fermentations represented are: the formation of alcohol from the sugar by yeast, the formation of lactic, acetic, butyric, and propionic acids from the sugar and alcohol by bacteria; the formation of the decomposition products of protein by the action of bacteria on the protein compounds of silage, and, finally, if the opportunity presents itself, the destruction of the acids of the silage by molds. This latter fermentation is prevented by keeping out the air.

Irregular Milking and the Fat Content.

Every person who keeps cows and knows anything more than the barest fundamentals about them, knows that regular milking is highly to be desired for several reasons, most of which need not be spoken of here. One important reason in favor of it and one commonly overlooked is the way it affects the richness of the milk. If milking is done just 12 hours apart every day, both milkings will have not far from the same percentage of fat. If there is a space of 10 hours one way and 14 the other, the difference in richness of milk will be considerable.

This point is just brought up in Farm and Home, an English paper, in striking fashion. The story tells of a dairyman who milked at 5 in the morning and 1:30 in the afternoon; that is, with 8½ hours between the milkings one way and 15½ hours the other way, which evidently are standard hours for milking there with some dairymen.

This dairyman had more milk than was needed for his retail trade and sold some to a nearby creamery. He sent in his morning's milk, and, after three samples, this showed 2.85% fat and 11.86% total solids. That looks like pretty poor milk, when market milk in California should test 3.2 or 3.4% to come within the law, and from the average lot of cows would be very much better.

Next morning the milk tested 2.5% fat and 11.69% total solids. In the afternoon a visit was paid to the dairy and samples taken, with the result that 4.05% fat was found and 13.42% total solids—pretty good milk for a Short-horn herd, as this probably was. Everybody was surprised at the difference and suspected errors, and they tried it over with just the same kind of results.

Of course, such milking is not good for the cows, and the narrator wrote: "On entering the shed in the morning half the cows were seen lying down, their udders being heavy with a too full weight of milk, while from a third of the herd milk was issuing from the teats, either by drops or a thin stream, and in one case the cow lying down had a fairly respectable rivulet of milk streaming from beneath her hindquarters into the gutter!" That gives a pretty strong reason for regular milking, though a different one from the first named.

In another case the morning's milk averaged for four different times only 2.50% fat and 11.60% total solids, and when the creamery refused to take more of such milk, morning's milk and evening's were mixed and tested 3.40% fat and 12.40% total solids, which was just about right; but better mix it in the cow and be done with it.

With market milk the dairyman by irregular milking would give richer milk than was necessary one time and milk so thin he would be in danger of the authorities another time. He loses in the total production of his cows and injures them instead of developing them properly.

A very interesting point is brought up in the English paper, and that regards such milk as a food for babies, which matter may interest folks with a baby and a family cow who do not practice the 12-hour milking period very faithfully. By irregular milking, the baby, taking just the same amount of milk, gets an overdose of food one time and an underdose another. The writer illustrates the matter very clearly when he says: "To make this point more striking, let us recall that in a milk containing 2.5% of fat a pint will contain about 109 grains of fat, and one of 4.05% will contain about 177 grains of fat; so that an infant fed with a pint of the first milk in 12 hours will receive 109 grains of fat, and in the next 12 hours with the 4.05% will receive 177 grains of fat, or, proportionately, if in the morning it had 100 grains of fat, it would in the evening have 162 grains." No wonder digestion is upset.

As with nearly everything, when you find one good reason for not doing a thing, you find others too, and this only strengthens the common belief that regular milking is the best plan on a dairy.

D. J. W.

OFFICIAL TESTING AT VINA.

Among those records officially recognized by the Holstein-Friesian advanced register in their latest report were the following by cows owned by the Stanford University at Vina:

Bibara, 159699, senior yearling, 373.1 lbs. of milk, 11.467 lbs. of fat; Pelmala, 97174, senior 4-year-old, 427.7 lbs. milk, 12.96 lbs. fat; Natapantha, 68248, aged class, 643.8 lbs. milk, 12.70 lbs. fat; Belema, 88142, aged cow, 447.5 lbs. milk, 13.93 lbs. fat; Brinka De Kol, aged cow, 475.4 lbs. milk, 14.7 lbs. fat; Durmelia, 83382, aged cow, 563.9 lbs. milk, 15.924 lbs. fat; Toga Dulcina, 60773, aged cow, 556.7 lbs. milk, 18.97 lbs. fat. These tests were for 7-day records, and are, we understand, only the forerunners for more good work along this line in the herd.

WATER WHEEL LIFTS IN RECLAMATION, DRAINAGE, IRRIGATION, ETC.

(*Continued From Page 317.*)

this deep type up to the necessary greater capacity, and while consuming the same amount of power to attain the same efficiency. A simple and easily understood illustration might be, for instance, to suppose it were desired to elevate one cubic foot of water per second, one thousand feet high.

This would mean 114 actual water horsepower result, that is, with absolutely no loss between input and result. (Probably there would be about 200 horsepower required.)

Now, then, figuring the same simple way: if 114 horsepower were put into a lift of 100 feet in elevation without loss, there would naturally result a discharge of ten cubic feet of water per second, instead of one cubic foot.

However, the pump would of necessity run at so greatly an increased rate of speed to put these ten cubic feet of water per second through its water passages, that both the mechanical and hydraulic friction losses would be greatly added to. This would mean so much more work required that a very much greater percentage of power would have to be added to the 114 horsepower to arrive at a full result for the 100-ft. lift than would have to be added to the same horsepower to furnish the same proportional smaller quantity for the higher 1000-ft. lift.

Reversing this proposition, or placing a pump adapted at its best efficiency to a lower head at work on a high head: in the first place, the pump would not stand the strain, so two or more would of necessity be used in successive lifts, with the consequent efficiency losses added to in each lift. This, then, is getting at efficiency, or really what is the operating cost in money, and money is the value exchanging measure for all things. Thus we would find, in order to lift the quantity of one cubic foot of water through a distance in elevation of one foot, during a time period of one second, that the unit cost in the first hypothesis would be more for the lower than for the higher lift, and for the second hypothesis, more for the higher than for the lower lift.

The above illustration, which is of course exaggerated, is cited to make matters plain and to show the possibilities of selecting the wrong machine for a contemplated piece of work.

Ready-Made Buying Habit.—It may be due to the ready-made buying habit that the average buyer of a pump, if he has seen a certain type operating under its most favorable conditions, becomes over-impressed with the sparkling, flowing stream of water, and neglectful of some simple mathematics, jumps blindly to the conclusion that the apparatus must be adapted to his conditions. These conditions may possibly be radically different. He may install it and get the same sparkling stream. Later, if he is of an investigating turn of mind, he may find that the input in price of the thermal units used from his coal pile or oil barrel or the electrical energy in kilowatts that he is paying for, are more costly than they should be for the amount of work he is receiving in water elevated through some certain height.

The ready-made buying habit is no doubt induced by this age of package goods, ready-made shoes, etc. In fact, every article of human use, from the smallest and most inconsequential thing to even a locomotive, is now cast in quantity from the same die and carried in stock by storekeepers ready made and for sale. It is not intended to decry this system of supplying the wants of the race, because it has worked great good in having furnished better articles for less cost. Thus through cheaper mechanical appliances, the hours of human labor and drudgery have been reduced.

However, we become so habituated to buying these things out of a shop and carrying them away with us under our arms that we are also unconsciously liable to do the same with things which often should be made to fit the place. One of such things are pumps.

Low-Head Pumps.—This article refers particularly to pumps of large capacity for operating under low heads, say up to six feet or possibly slightly more. The accompanying sketches show a type of water lift which has been in use probably many thousand years, though not developed perfectly in either a mechanical way or in size, until within possibly one hundred years. This, then, must seem to be a very old and obsolete apparatus to put alongside of and recommend in preference to some present-day so-called modern apparatus. However, for extremely low and variable heads, where it is desired to handle large and varying quantities of water, it is the most efficient of any type which may serve that purpose. It is a type of machine particularly adapted to land drainage or the elevation of water from a river or irrigating ditch to a slightly higher level. There are many instances in irrigating districts where a certain tract of land may be slightly higher than the general level of the surrounding country. As it is above the gravity ditch system, it may therefore be of small relative value compared to immediately adjoining property. For either such a situation as this or a land drainage proposition, the general variable nature of the quantity of water to be handled necessitates a corresponding variation in the work of the water-raising apparatus. With a pump of some ordinary ready-made type, which of necessity would be designed to handle at its highest efficiency some certain quantity of water, variation either way from this quantity will result in loss of maximum efficiency. This loss, due ordinarily to entrance head and friction head, is the principal cause of loss, and it increases very rapidly as one of these low heads decreases.

One of the features of this wheel is that, throughout a fixed elevation, the efficiency will decrease from a maximum but slightly as the quantity of water decreases. If the machine has been properly designed as to entrance and discharge of water, as well as speed, etc., the loss will be practically in slip alone. This will, of course, be proportionately slightly greater as the amount of water which the buckets are carrying decreases.

Sketches.—The sketches shown herewith are not to be considered as possible of reproduction to apply to any and every location and condition. They are merely general in character, and, as will possibly be noted, they are lacking in many essential details. These were, of course, shown in the original drawings from which these sketches were taken.

The plant was designed to lift 50 cubic feet of water per second, or 22,500 gallons per minute, through an average height of 4 feet. However, the lift is in a degree variable, and the quantity may in an emergency be above that mentioned. It will also operate efficiently from this amount down to a very small quantity, as noted above.

Electricity was selected for the motive power of this particular plant because it simplified design, was cheaper in first cost of installation, and cheaper in wear and tear, depreciation and operation.

Fuller discussion of points involved will be given next week.

More State Fair Awards.

Below will be found the awards in the draft horse and jack classes. The judge, John T. Caine, of Logan, Utah, was profuse in his words of praise of the animals which received the following awards:

PERCHERONS.

McLaughlin Percheron Co.—Stallions: 1st and 2nd 4 yrs. and over; 1st 3 yrs. and under 4; 1st and 2nd 3 yrs. and under 4; grand champion open class; 1st championship trophy for 5 owned by exhibitor; champion in special prize, open class; reserve champion.

Wm. Bond—Stallions: open class, 3rd 2 yrs. and under 3; state class, 2nd 4 yrs. and over; 3rd 2 yrs. and under 3; 2nd special Percheron Society prize under 3 yrs. bred by exhibitor. Mares: 3rd 4 colts get of one sire; 2nd two produce of one dam.

E. F. Kleinmeyer—Stallions: open class, 1st 1 yr. and under 2 yrs.; state class, 3rd 1 yr. and under 2; 2nd and 3rd Percheron Society prize 3 yrs. or over, bred by exhibitor; 3rd championship trophy for 5 owned by exhibitor. Mares: open class, 2nd and 3rd 4 yrs. and over with foal at feet; 3rd 4 yrs. and over without foal; 3rd, 2 yrs. and under 3; 1st 1 yr. and under 2; 1st foal under 1 yr.; 1st 4 animals under 4 yrs., get of one sire; 1st two produce of one mare. State class: 2nd and 3rd 4 yrs. or over with foal at feet; 1st mare 4 yrs. and over; 2nd 2 yrs. and under 3; 1st 1 yr. and under 2; 3rd foal under 1 yr.; 2nd two animals under 4 yrs. produce of one mare; 3rd special 3 yrs. and over, bred by exhibitor; 3rd under 3 yrs. bred and owned by exhibitor; 2nd two colts produce of one mare; 1st one stud and four mares, mares bred by exhibitor.

Louis Titus—Stallions: open class, 3rd over 4 yrs.; state class, 1st over 4 yrs.; 3rd 3 yrs. and under 4. Mares: open class, 1st and 3rd 3 yrs. and under 4; 1st 2 yrs. and under 3; state class, 2nd 3 yrs. and under 4; 1st 2 yrs. and under 3; champion and reserve champion special prize.

M. Bassett—State class stallion, 3rd 4 yrs. and over; open class mares, 2nd 3 yrs. and under 4; State class mares, 3rd 3 yrs. and under 4; 2nd Grade gelding 3 yrs. and under 4; 2nd 2 yrs. and under 3; Grade mares, 2nd 3 yrs. and under 4; 2nd 2 yrs. and under 3; 2nd 1 yr. and under 2.

Stalder Bros.—State class stallions: 2nd 2 yrs. and under 3; 2nd 1 yr. and under 2; 1st special prize, 3 yrs. and over, bred and owned by exhibitor; 1st under 3 yrs. bred and owned by exhibitor; champion and reserve champion bred and owned by exhibitor; 2nd trophy 5 stallions owned by exhibitor. Open class mares: 1st 4 yrs. and over; 1st and 2nd 4 yrs. and over without foal. State class mares: 3rd 1 yr. and under 2; 1st and 3rd four animals under 4 yrs.; 3rd four colts, either sex, get of one sire.

H. G. Learned—State class stallions: 1st 1 yr. and under 2. State class mares: 1st 4 yrs. and over with foal at feet; 1st 3 yrs. and under 4; 1st stallion or filly foal under 1 yr.; 1st two animals under 4 yrs. produce of one dam; grand champion State class mare; 1st special, 3 yrs. or over, bred and owned by exhibitor; champion mare bred and owned by exhibitor.

Walters—State class, stallions, 1st 2 yrs. and under 3; grand champion.

SHIRES.

Salvador Stock Farm (Henry Wheatley)—Open class stallion, 1st and 2nd 4 yrs. and over; 1st 3 yrs. and under 4; 1st 2 yrs. and under 3; 1st 1 yr. and under 2; grand champion open and state classes. Mares: 1st 4 yrs. and over; 1st 3 yrs. and under 4.

A. M. Easton—Stallions, 3rd 4 yrs. and over; 2nd and 3rd 1 yr. and under 2. Mares: 2nd 4 yrs. or over with foal; 2nd mare 4 yrs. or over; 2nd and 3rd stallion or filly foal under 1 year.

E. W. Westgate—Mares: 1st 4 yrs. or over with foal at feet; 1st stallion or filly foal under 1 year.

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W. J. Greer—Jacks: 1st 3 yrs. and under 4; 2nd 2 yrs. and under 3; 2nd 1 yr. and under 2. Jennies: 1st 4 yrs. and over; 2nd 3 yrs. and under 4; 2nd 2 yrs. and under 3; 1st filly or jack foal under 1 yr.; 1st four animals under 4 yrs. get of one registered sire; 2nd two animals under 4 yrs. produce of one jennie.

W. A. Merrill—Jacks: 2nd 4 yrs. or over; 1st 2 yrs. and under 3. Jennies: 1st 3 yrs. and under 4; 1st 2 yrs. and under 3; 1st two animals under 4 yrs. produce of one jennie.

Eaton & Hughes—Jennies: 2nd 4 yrs. or over with foal at feet; 2nd jack or filly colt under 1 year.

J. A. Logsdon, of Blackburn, Missouri, judged the mules and gave very satisfactory decisions.

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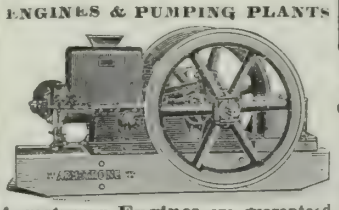

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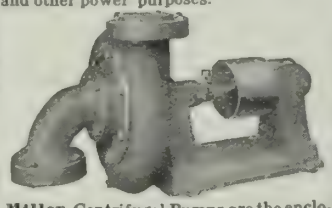

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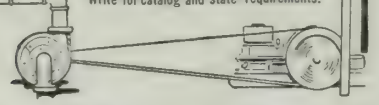

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VETERINARY ANSWERS.

[By Dr. E. J. Creely, San Francisco Veterinary College.]

LOCKJAW.

To the Editor: I have a young horse which was clogged in bowels and kidneys for 24 hours; is now all open, walks and drinks well, and fills his mouth with green feed or hay, but cannot swallow. I give him grease through his nose. Is his mouth paralyzed or has he lockjaw? What can I do for him?—J. R., Sebastopol.

It may be lockjaw or paralysis of pharynx. The nearest veterinarian should be called in at once. Whenever you administer medicine through the nose, you are inviting mechanical pneumonia, which is almost certain death.

THOROUGHPIN.

To the Editor: I bought a mare 7 years old with thoroughpin on both legs. I was told she was treated and the nerve killed. She is not lame.—Rancher, Yolo county.

I would not touch a thoroughpin that does not cause lameness. They are similar to all bursal enlargements and should not be touched unless necessary.

POLL EVIL.

To the Editor: Is it possible to cure a swelling on top of a horse's head just back of the ears? We brought it to a head a day or so ago with caustic balsam.—A Subscriber, Lincoln.

This is a poll evil and can only be cured by an operation by a veterinarian. Caustic balsam only aggravates, the same as any counter-irritant.

WARTS ON NOSE.

To the Editor: I have a two-year-old colt that has a sort of warty growth around his mouth and nose. He has been out at pasture and is in perfect condition as to health; eats and drinks well. Is there anything that will remove these? —Subscriber, Duncans Mills.

Paint the warts once daily with Donovan's Solution of Arsenic. After one week touch lightly with caustic potash.

GARGET (MASTITIS MAMMITIS).

To the Editor: I have a cow that came fresh about two months ago. She has garget which closed up one of her teats, although I have been able to take a little matter from it every day, and now her udder is quite soft. I would like to know if there is any possible chance to bring her teat back; also here of late she has been kicking when being milked as if her udder was sore. I would appreciate any information in regard to this.—C. D. N., Hughson.

Garget (mastitis mammitis) can only be successfully treated by an autogenous vaccine. I took this up very recently. (See Pacific Rural Press of July 26, 1913.)

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouilletes, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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COWS HOLDING UP MILK.

It is quite common to find cows that have the bad habit of holding up their milk, a thing that is hard to overcome unless a person knows just how to go about it. There is always a definite reason for it, however, as a cow that has everything to please her physically and mentally will be very unlikely to hold up her milk, and a cow that holds up her milk and is put in physical and mental comfort will quite probably give it down again. Farm and Home (England) discusses this subject briefly in a way that gives some interesting pointers to persons dairying anywhere, and says:

Cows are often "difficult" in regard to giving down their milk perfectly in the height of the milking season. They fall into the habit in the flush of feed from tenderness of the udder, especially if the spaces between milkings are unequal, so that at one of them the bag becomes very much overstrained and painful. The bag thus becomes inflamed, swollen, and hard, and withholding the milk or any part of it tends to increase the difficulty. From an unequal division of time between milking, some cows habitually hold up their milk at night and give it down in the morning. The habit once being formed, there is no sure cure for it. The same treatment will not work alike on different cows. As a rule, cows give down best in a few minutes after they first come into the stable or yard without having any food before them or anything to attract attention or disturb them, but some will give their milk more freely if eating something that they relish well, so that their attention is more taken up with the food than the milking. Regular, evenly timed, quick, quiet, and comfortable milking is essential, and the best means, both for preventing and for breaking up the bad habit in cows of holding up their milk.

REGISTERED HOLSTEIN COWS AND HEIFERS FOR SALE.

Call and see them at Modesto (5½ miles northwest).

This is a choice lot, part A. R. O. cows.

M. HOLDRIDGE.

PIE MELONS FOR SHEEP.

Pie melons are a common crop in parts of California, and are relished by certain kinds of stock. If anyone has some sheep to feed and pie melons to get rid of, he might make a good turn by putting the two together. Australia, for instance, is a land of cheap sheep, yet a farmer there reports very favorably on pie melons as sheep feed. He writes to an Australian exchange: "It may be of interest to your readers to know that pie melons are a good fodder for sheep. I have grown them for three years, with capital results. Having plowed up what was originally a rabbit warren in white sand, I planted melons, and during April and May it carried 15 sheep to the acre, and they fattened on it. The following year I sowed oats, and after harvesting the crop had a fair yield of melons, although small. The third year, without further cultivation or sowing, the land produced about 50 tons of melons to the acre.

We are just coming to the small farm sheep in California, and if the melon crop is a profitable one to the sheep-owner there, it should be more profitable here.

Side Lights on the Fair.

[Written for the PACIFIC RURAL PRESS by J. C. L.]

What was perhaps the first complete silo ever shown at a State Fair was exhibited by the De Laval company this year. As it showed a cutter and blower in operation, it was one of the best educational exhibits among the dairy equipment entries.

The improvement in the Holstein herd of the Stanford University was very evident, and the young stock showed the benefit of careful breeding and good feeding.

H's Big Bone, in receiving the grand champion award for a Poland-China boar of any age, showed in repeating his performance of last year that his owner, A. M. Henry, has good foundation stock.

Those who saw the exhibit of Himmon milkers exhibited by C. A. Daniels were almost unanimous in saying good things for the mechanical milkers.

A large size showing the records of butter-fat production for cows of different ages was erected by A. W. Morris & Sons, the Holstein breeders. The sales made during the week demonstrated that more interest is being taken in production than heretofore.

The prize-winning flock of Shropshires shown by Bishop Bros. may be shown in the East this year and should make a reputation for themselves and owners, as they are an exceptionally fine bunch.

In making the awards of the Shire horses, most of which were received by Henry Wheatley, of Napa, the judge stated that the entries competing were of fine enough quality to enter any show ring in this country.

Poland-China breeders will have cause to look out for W. A. Young, of Lodi, in the future, if he continues to do as well as he did this year.

The show herd of N. H. Locke is in better condition this year than ever, and after the State Fair he will make several county fairs and also the Nevada State Fair. Judge Reid said that his bull, Borello's Golden Laddie, and his offspring made a wonderful showing.

The Short-horns exhibited showed rare good judgment in selection and fitting, and the principal winner, T. S. Glide, deserves credit for keeping that end of the livestock show in evidence.

The boar, Artful Masterpiece, exhibited by the Oak Grove Dairy Farm, is one of the greatest individuals among the Berkshire breed to be found anywhere, according to Judge T. F. McConnell. If this boar was a few years younger he would make a good showing at San Francisco in 1915.

The Jersey bull, King Polo of Bleakhouse, exhibited by G. O. Hillier, greatly aided in adding quality to the Jersey classes.

The herd of Duroc Jersey hogs shown by John Daggs, of Modesto, showed a big improvement over last year's herd and were in fine condition for showing.

A large increase in home-grown Percherons was the main feature in this year's show, but the fine showing of imported animals exhibited by McLaughlin Bros. showed that a good deal of improvement can be made by home breeders.

That a producer is not always a show animal was shown by W. J. Hackett, the Jersey breeder, who came out strong on the milking contest if he did not do so much in the show ring.

The much sought for trophies given by the National Duroc-Jersey Record Association went to J. K. Fraser, of Denver, this year.

The Hereford exhibit made by the Simon Newman Co. made a good showing and received the bulk of the awards, showing that the white faces are of as good or better quality than some of our Northern States showed.

The Guernsey showing was greatly added to by A. B. Humphrey, and it is evident that in the future this breeder will greatly aid both the Berkshire hog and Guernsey cattle breeds.

That the Jersey cattle breeders are making much progress in the State was demonstrated when part of the herd owned by the Rancho Dos Rios was shown. This herd, while the oldest in the State, has not been shown before for a long time.

Poland-China admirers are always sure of seeing fine medium type individuals in the showing of M. Bassett, and this year was no exception. Mr. Bassett surely has a lot of hog knowledge under his hat.

The herd of Jersey cattle and Duroc-Jersey swine exhibited by J. E. Thorpe showed what may be accomplished in a short time in the pure-bred business, provided a man has a strong ambition to reach the top.

Hereafter the Short-horn cattle and Berkshire hog entries of H. L. Murphy will no doubt be much better, as he has great confidence in the dual-purpose cow and the pug-nosed hog.

That good hogs may be raised by a new breeder was shown by Linquist Bros., of Turlock, who showed much improvement over their last year's show.

That Eastern-bred Holsteins improve with age in California may be seen by Dr. Weldon's showing this year. This herd has lost many of the rough spots that were apparent last year through shipping from the East.

That Hampshire hogs and Guernsey cattle are adapted to California conditions was shown by the exhibit of these two breeds by Dr. Henderson of Berkeley.

Hog breeders generally did not fit so highly this year as usual, and this was noticeable in the herd of W. H. Browning's Poland-Chinas.

Ed. Johnstone, of Turlock, considers the Duroc-Jersey hog more profitable than fruit culture, and expects to increase his holdings of pure-breds.

The hog judging space erected during fair week was a badly needed and highly recommended improvement.

The Kansas State Society had headquarters on the ground in the shape of a tent with copies of Kansas papers. This is the first time any State society has had a meeting place at the Fair, and should be continued both by Kansas and other such State societies, as the State Fair would be a much larger success if visitors were able to meet friends from their old home State.

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OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

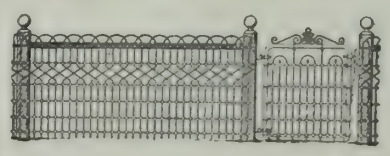
POLAND-CHINA HOGS

LARGE TYPE

YOUNG STOCK FOR SALE. BOTH SEXES.

THE BROWNING STOCK FARM.

W. H. Browning, Prop. Woodland, Cal.



ANCHOR YARD FENCING.

CHEAP, ARTISTIC, DURABLE.

Write for catalogue containing illustrations and price lists of Anchor Ornamental Fencing, Kokomo Field and Poultry Fencing, Gates, etc.

CALIFORNIA ANCHOR FENCE CO.,
822 E. Main St., Stockton, Cal.

WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

THE EXCLUSIVE PIPE HOUSE.

PACIFIC PIPE CO.

Main and Howard Sts. San Francisco

What Kind of Mares for Mules?

Some may get the idea that any kind of dam will do for a mule—especially one which may not seem quite worthy to carry a horse colt. W. E. Grant gives the Texas Farm and Fireside his idea, which suggests that the dam of the mule needs to be even more carefully selected than the dam of the colt, for the obvious reason that the colt gets nothing in the way of desirable form from the jack, while it may get a great deal from a good horse. But we will let Mr. Grant reason it out:

We agree that the choice of a dam for a mule will depend upon the individuality of the mare. We mean by this, whether her points fit her or unfit her for a producer of good mules. By points we mean the individual marks, which any horseman can see as the mare stands before him—conformation, apparent vitality and quality.

We did not include size in the list, because mere size is worthless if unaccompanied by good proportions. In choosing the mare for a good jack (we presuppose that your jack is a good one, for there is no profit in breeding to any other kind), look first to her head. Her eye should be bright and full—a good breadth between her eyes, and depth from the top of her head to her eyes, giving plenty of brain space. Her neck should be long with a good arch and crest, with head well set on. Height at the withers is of prime necessity in the mule mare. Whatever the breed, look for good sloping shoulders. This generally goes with a short back, which is an important point. Your mule should be built from the ground up. Too much daylight must be avoided.

Look for indications of strong vitality in the mule mare, brightness of eye, appetite, playfulness, cheerful disposition. We all know that no mare breeds as surely to a jack as to a horse, and we should pick the ones which give most promise to be sure breeders. Health is a major consideration.

Need of Fixed Type.—A mare's breeding plays a great part in the decision of whether she should be chosen for the jack. She should come from some pure strain of blood. She should show the family characteristics of this strain. However good she is as an individual, if this is not backed up by a line of these marks, you cannot know that she will perpetuate the very qualities which would mark her as a producer of good mules. Her blood line should be known to be sure, whether she is Percheron, standard, thoroughbred, or Spanish. If she is not pure something, she may breed pure nothing.

Other Things Needed.—It takes more than any one thing to prove that a mare will bring a good mule, it requires a number of different qualifications.

As above stated, she should have a large, full protruding eye, should have a broad forehead. Here's a good general rule: A good type of mule mare will measure one hand taller than you would guess when standing off and looking at her. She will, likewise, weigh 100 pounds above your guess. Her height should range from 15 to 16½ hands. The latter is dangerous unless she is especially well proportioned. In weight she would have a margin of from (in standard-bred mares) from 900 to 1250 (in thoroughbreds) 1000 to 1200, in Percherons and other draft breeds, 1500 up to a ton.

If you have agreed with me all along you will have no trouble in staying with me now when I say that although the mule mare should be all these things I have mentioned; as a matter of fact, when we start the season we find that none of the mares brought to our jack have all of these ideal qualities; some are lacking in one thing and some in another. After a month or so at the stand we declare that if we get a single good mule it will be due to our good jack, solely and wholly.

We will never find these ideal mares; the perfect kind don't grow at present. The best we can do is pick the mares that show the best points as mule producers, breed the others to a horse that has the characteristics to hand down, if the resulting fillies are up to standard, turn to the jack; if not, back to another horse. This is our only line of attack in producing the proper type of mare for mule breeding.

The cover of the milk-can needs washing as much as the can does.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. ☞Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

ONE REGISTERED

PERCHERON STALLION

2 years old, color steel gray; will make 1800 to 2000-pound horse.

Also one Registered Percheron mare, 6 years old, color steel gray, for sale. Both fine individuals.

C. W. VAN GELDER
Acampo, Cal.

SHROPSHIRES

Pure Bred and Registered
140 Head Yearling Rams
150 Head Ram Lambs

Enterprise Stock Farm
H. P. EAKLE, Jr. Woodland, Cal.

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

Are You Watching Your Cows' Milk Production?

Try the addition of Larrowe's Dried Beet Pulp to their ration—and then watch the immediate and substantial increase.

READ THESE LETTERS

Larrowe's DRIED BEET PULP

—is simply the natural root of the sugar beet—shredded clean and pure, (with only the sugar and water extracted)—dried and packed in 100-lb. sacks. Cattle eat it ravenously. Poultry thrive on it. It is also excellent for hogs, sheep, etc.

Larrowe's Dried Beet Pulp is a versatile feed; it is succulent and can thus be used instead of silage; it is bulky, palatable, easily digested and rich in nutriment. Dairy experts agree that it is the ideal feed to use with Alfalfa—balancing the ration perfectly and being better and cheaper than bran or rolled barley. It will make your cows bright-eyed, sleek-coated, and prolong their milking periods.

Remember, carbohydrates are as essential as protein. Alfalfa furnishes an abundance of protein and you can balance your ration perfectly by the addition of Larrowe's Dried Beet Pulp which is rich in Carbohydrates.

San Francisco,
June 28, 1913.

Larrowe Milling Co.,
Gentlemen:
It affords us pleasure to state that we have been using your dried beet pulp for the past two years and have found it an excellent food for milch cows. We have been feeding it with small quantities of ground wheat (or ground barley) and alfalfa hay, and the combination is unquestionably **the most satisfactory ration we have yet used.**
Respectfully,
(Signed) MILLBRAE DAIRY.
By Jno. F. Cannon.

Inglewood, Cal.
R. F. D., Box 198, 7-1-13.

The Larrowe Milling Co.
Gentlemen:
Since receiving the trial order of dried beet pulp from you November, 1911, we have used several cars of your product through our local dealer.
We feed about 8 lbs. per cow daily, which enables us to cut down the hay 10 lbs. apiece, and yet get nearly **five gallons more at a milking** from the herd (35 cows) than when we are feeding hay alone.
At first we soaked it, but have found that it is as well to feed dry, and of course much easier.
Yours very truly,
(Signed) BOSMAN & DILLON.

Los Angeles, Cal.,
University Station,
July 26, 1911.

The Larrowe Milling Co.
Gentlemen:
I have been feeding dried beet pulp to a cow for eight days. Before beginning to feed the pulp the cow was fed on green alfalfa without any grain ration, and she gave five gallons of milk per day.
When fed ten pounds of pulp per day and green alfalfa, she gave six gallons of milk. **On discontinuing the feeding of pulp the milk shrank** to five gallons.
Less alfalfa was fed when feeding pulp.
The pulp was fed dry.
Yours truly,
(Signed) HENRY FRANKE,
Gilt-edge Dairy.

There is no better, surer way to convince yourself of the exceptional value of this succulent, milk-producing, vegetable food than to serve it to one or more cows whose milk record you know—and keep track of results. You will be so pleased you will add it to the ration of your entire herd.

It will cost you practically nothing to demonstrate to your own satisfaction what a wonderful feed this is. Simply go to your feed dealer and purchase one or more sacks of Larrowe's Dried Beet Pulp—add it to your regular ration—and watch results.

We call particular attention to

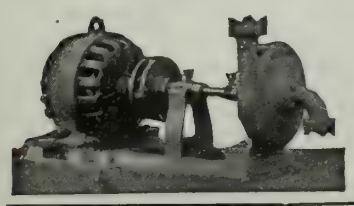
LARROWE'S MOLASSES-DRIED BEET PULP

which is preferred by many feeders on account of its sweetness.

This is simply the plain beet pulp with beet molasses dried; put up in the same way as the plain and sold on the same basis. It is the ideal feed for fattening—for horses—for poultry, etc., as well as for dairy cattle. Order a trial sack from your dealer and notice the way your stock take to it.

WRITE FOR OUR BOOKLET—"PROFITABLE FEEDING"
containing full information about dried beet pulp, its food value, feeding instructions, etc. A copy will be sent free to any address on request.

THE LARROWE MILLING COMPANY.
607 Central Building - - Los Angeles, Cal.



PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.
Our retail prices are less than our competitors' wholesale prices.
We guarantee our pumps the equal in quality and capacity of any. Live agens wanted. Write for circular and prices.
PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

Much farm machinery wears out more through exposure than through use.

Regularity in dairy work is a very important item.

The Show Season is Near.

[Written for the PACIFIC RURAL PRESS by Mrs. SUSAN SWAYSGOOD.]

There is no doubt that California ranks among the first States in poultry shows. This may not be because there are more fanciers in the State, but perhaps because our climate during the fall and winter months is so genial that attending a poultry show is a real vacation to the hard-working poultryman or woman. And California can boast rather more women fanciers than most States, and nearly all of them go to some of the shows every year.

The first show on the list after the State Fair is San Jose. This show is always held in one of the most commodious and well lighted rinks to be found. There is only one drawback to the pleasure of visiting the San Jose show, and that is the dogs; being a combined poultry and pet stock show, the visitor who does not mind noise can surely get plenty for his money. Many rare and beautiful little animals and birds are to be seen; nearly all breeds of dogs from the Great Dane to the tiny little Pomeranian, and all blue-blooded aristocrats with long names and lots of forbears behind them. But good land! There is so much noise made by these self-same aristocrats that one would fain ask where the difference lies between the blue bloods and the scrub curs.

In early October, Riverside is to have a county fair and poultry show combined, and I hope to attend that and give you an idea of what a southern county can do in the way of county exhibits.

There is nothing slow about the men who take the lead in any of these enterprises gotten up in the southern part of the State. They are all hustlers of the real American brand; so I am looking forward to having a royal time.

Of course, I can't begin to mention all the shows that are to be held this fall and winter on the Pacific Coast, for their number is increasing every year—a proof, if any were needed, that our people are progressive and on the lookout for anything that is educational. Poultry shows are educational in many ways, and they have great possibilities to educate the young. Things that are seen with the eye are rarely forgotten, provided the child's interest is aroused to the extent that he observes the objects in the right mood.

ATTEND THE SHOWS.—Parents should make an effort to attend one or more of the poultry shows and take the children along. With an automobile the whole family could go to several shows at very little expense; but even without such a conveyance, it is possible to visit some of the nearest at a small cost. Nearly every county has from one to two or three shows—not all large affairs, but always with a good display of the leading breeds.

The real big shows of the season will be held at San Francisco and Los Angeles. These two cities are going to be rivals from now on. Although the San Francisco association is of quite recent birth, it is growing fast, and if only half the things materialize that are promised, this will be a show that no one can afford to miss who is at all interested in poultry. W. H. Ingram, the secretary, is a man of large experience in fine poultry and poultry shows, and he will bend every energy to make the San Francisco show a grand success. And then, after that show, which is to be held from December 31 to January 4, comes the Los Angeles show, January 7 to 13, 1914. The secretary of the Los Angeles show is a "live wire," a regular hustler who does not know what it means to be beaten, and he is already sending out notices of the great Los Angeles show, which is to be the banner poultry and pigeon show of the Pacific Coast.

RIVALS.—I guess yes, and pretty soon this sort of rivalry will boost the poultry business into public notice and raise the industry to a much more desirable position that it has held before. This is the right sort of rivalry; it is constructive instead of destructive; it will get the California hen a name that will be a credit to the State. There is nothing like poultry shows as object-lessons—everybody is not from Missouri, but they have to be shown the difference between a mongrel and a well-bred hen, and the difference is not just in feathers, as many suppose.

Another thing that is helping to advance the poultry industry, and incidentally the fancy side, is the various egg-laying contests. They are proving that the well-bred hen is the highest in utility. The Jersey, Holstein, Durham and other distinct breeds of cattle have been bred for utility in one line, but at the same time the distinctive marks of color, shape and form have been kept in mind, so that when a person sees one animal he knows what to look for in the same breed anywhere. It is the same with poultry, and what the fair and show has done for high-class cattle and horses, it is doing for the fancy poultry: educating the people to know a good hen of any breed when they see it.

The State Fair is a thing of the past, but the lessons learned are still personal property to those who remember. Any thief can rob us of money, but no one can take from another the knowledge he has garnered up in memory's store box.

CREDIT TO A MISSOURI HEN.—The following is taken from the St. Louis Republican:

"Treasurer opens account with hen. State Treasurer Edward P. Deal, of Missouri, is the first officer of that State to recognize officially the modest but industrious hen, who adds so much to the material resources and wealth of the State. He has opened an account with her. The treasurer was in receipt of a remittance from T. E. Quisenberry, manager of the poultry experiment station at Mountain Grove. The remittance was for $298, and the letter of transmittal stated it was the proceeds arising from the sale of eggs laid by the hens at the station, being surplus production not needed in conducting its affairs. The bookkeepers were puzzled as to how to credit the amount, this being the first revenue ever received from that source. They consulted Mr. Deal. He scratched his head for a moment, then said: 'Well, boys, we will just open an account with the Missouri hen, and credit her with having added $298 to the revenue of her State.' His directions were followed, and an official receipt for the amount went forward in due form to Mr. Quisenberry. It read: 'On account of the Missouri hen.'"

LICE AND TICKS.—Poultry raising has its lights and shadows, like everything else, and while writing on the bright, or light side, of the business, two letters have been claiming attention to the dark, shady side. And that is true in more ways than one, for lice and all vermin do delight in dark, moist places where the sun never penetrates. This year there has been more complaint of ticks and fleas killing chickens than I ever heard before, so I have ben reading and enquiring from all authentic sources as to the best methods of dealing with them, and the following remedies will be found effective if used according to directions:

Mrs. L. P. G., of Taft, Cal., asks, "What can I do for ticks? They are killing my hens at the rate of three and four a day."

Answer: If the ticks are in the henhouse, your work must begin there. If the house can be made tight, fumigation is the quickest and surest method. Use a pound of crude sulphur for each 100 square feet of floor space. Put the sulphur in an old iron pot, or dig a hole in the ground and partly cover with a piece of old iron or an old oil-can cut open. Make a fire with a little kindling, then put the sulphur on the fire and get out as quickly as possible, making the door tight. Let the sulphur burn out and then wait an hour or two before opening up. Have ready a good paint, made as follows: Shave a bar of laundry soap, cover with half a pint of water; when all soap is dissolved, add one pint of Cresol and beat it up until a paste is formed. Stir in one gallon of coal oil and apply to walls and ceilings with a brush.

The next job is to tackle the hens, and here is where we need to use a lot of good common sense, because while we can dope the walls with strong dope without injuring the wood, if ticks have been working on the chickens they are not in condition to stand much strong stuff, inside or out. But I find one remedy mentioned that will do no harm, and it is very reasonable—at least, it sounds so to me, and if I had ticks I would surely try it first of all. It is to give flowers of sulphur in the mash fed to the chickens, allowing one teaspoonful for each full-grown hen. The idea is that the sulphur alters the taste of the blood and disagrees with the ticks.

Besides this, I would dust the fowls with buhach powder, providing you can buy it. Personally, I am unable to find a drug store that sells pure buhach this year; they all have mixed insect powder that they claim is just as good, but on actual trial it is a long way from being as good. For hens in full strength and flesh I would take the quicker route and dip them in Creolin and water. The dip, to be effective, must be made full strength, as follows: To one gallon of water just warm enough to take off the chill, add 6½ fluid ounces of Pearson's Creolin. Dip the hens one after the other, equeezing out as much of the liquid as possible, so that the feathers will dry quickly, and also to save the dip. This dip will not injure a hen that has not been weakened with the vermin,

HOPLAND WHITE LEGHORN PULLETS

After October 1st will have 1000 four and five months old Pullets for sale at $12.00 per dozen.

We are now booking orders for January and February hatched Baby Chicks, from selected standard matings at $15.00 per hundred.

Hopland Stock Farm, Hopland, Cal.

POULTRY DEPARTMENT

HICKS JUBILEE HATCHERY

Now booking Orders.

Our chicks have no superiors and few equals. Send for list, it's free.

W. J. HICKS

R. R. 2, Box 22 PETALUMA, CAL.

TEN THOUSAND HEAD OF TURKEYS WANTED FOR THANKSGIVING

We want the farmers of California to raise ten thousand head of choice turkeys for our Thanksgiving trade. Last year we sold fancy dressed turkeys as high as 30 cents a pound. Commence now to get your turkeys ready for the Thanksgiving market. Have them as large and fat as possible. Write us immediately how many head you will have ready for sale at this time, as we want to keep in touch with you from now on until after Thanksgiving and Christmas. Send us the names of all of your neighbors who have turkeys and about how many head each one has on hand, and we will certainly make it to your object to do so. Mark and consign all produce you have on hand to us at San Francisco.

W. C. PRICE & CO., General Produce Commission Merchants, 211-217 Clay St.

POULTRY.

WHITE PLYMOUTH ROCK COCKERELS—Good birds. $3.50 each. H. S. Kirk, P. O. Box 597, Sacramento, Cal.

ORPINGTONS, BUFF AND WHITE—Summer sale of stock. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

FOR SELECTED EGGS AND CHICKS from S. C. White Leghorns, see Hopland Stock Farm advertisement.

CROLEY'S PIONEER EGG MAKER—Makes poultry pay when egg prices are low.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

BRONZE Turkeys and Eggs. Ed. Hart, Clement, Cal. Large size, good plumage, early maturity.

CROLEY'S HIGH GRADED HARD SHELL—The leader in poultry shell.

A QUICK MOLT

You want a well balanced ration of good strength in protein like

COULSON'S EGG FOOD

to get through the molt quickly and get your share of eggs in the fall.

Write us for name of nearest dealer.

COULSON POULTRY & STOCK FOOD CO., Petaluma, California.

but it will surely kill the ticks or any other parasites.

DOUGLAS MIXTURE.—Mrs. A. B., Los Angeles, asks how to make the Douglas mixture. This mixture is made as follows: Iron sulphate, 16 ounces; dilute sulphuric acid, 1 fluid ounce; water to make one gallon. Mix and keep either in stone or glass jars. One tablespoonful of the mixture to one gallon of water is plenty, and it is not advisable to continue its use long at one time.

How Poultrymen Are Co-operating.

[By the ASSOCIATE EDITOR.]

California farmers are hurrying into co-operative buying and selling as fast as they can and in spite of the publicity that has been given there are small co-operative organizations here and there which the general public knows not of. One such is at Hayward, a few miles south of Oakland. Hayward is in the center of one of the richest farming districts of the State, the land having a high value on account of the nearness to the bay city markets and on account of the pleasant, uniform climate and the great depth and richness of the soil.

In back of Hayward, is Castro valley, small in area, but beautifully situated and surrounded by hills. In here are found some of the largest and most modern poultry plants in California and numerous small plants also, Hayward being one of the leading poultry centers of the bay district, and the following is to tell how some poultrymen there got together by degrees to sell their eggs and to buy feed until the Hayward Poultry Producers Association is one of the most flourishing small co-operative organizations in California. Egg men throughout California have been more wrought up during the year than ever, more about the price of eggs, middlemen's profits and (they believed) the general manipulation of the market by the middlemen. This Association might in moderate degree point a way to remedy matters.

It was formally incorporated in November, 1910, but was in existence for a number of years before. Like Topsy, "it just grew," so to speak, for it started informally, gained momentum as success was pointed to by results, and was incorporated when large membership and legal requirements made incorporation seem advisable.

THE START.—The start was very simple. Poultrymen in Castro valley did not like egg prices and middlemen's profits, or rather decided to keep some of those profits to themselves. About 15 of them got together and decided that they would interview some big retailers in Oakland and San Francisco and see if they would take the eggs direct. Egg men usually get quotation price, less cost of shipping, handling, a small profit, etc., and the retailer pays about two cents more than quotation. This leaves above all necessary costs about two cents that would be saved if the retailer could get the eggs direct from the producers, so the representatives went and offered to deliver the eggs for a cent over quotation and the retailers took up the offer at once. That has been the method ever since, the producer getting quotation f. o. b. Hayward, the extra cent going toward expenses. This means about a cent more than would ordinarily be received.

The plan worked well. The eggs were sure to be fresh and as every man's name was on the case, the dealer could soon tell who was responsible if undersized or mishapen eggs were put in as extras. The cost of candling and repacking was thus unnecessary, as it would be in a wholesaler's business, who could not be sure that all the eggs from many of his customers were as fresh as they should be. This egg business has grown to about an average of 250 cases a week.

In a way the eggs are not sold co-operatively, but my contract. One of the membesr, Gus Brown, receives all the eggs at the warehouse of the association and sells them on his own responsibility and risk, paying flat quotation for them. The egg trade through the association would be larger, only many of the members have their own patrons, since they are close enough to the market to deliver the eggs themselves, and can get a little better price by doing so.

THE BUYING BUSINESS.—Buying cheap is as good as selling dear, and the original 15 had the idea of finally working into the buying business and the success of their egg selling made them believe they were on the right track. But farmers are rather backward about trusting each other too far, and the first purchase was on the responsibility of several members rather than as an association. At a meeting they decided they would like to buy a car of wheat, but did not quite know how to provide the funds. Finally one member offered to put up $200, another followed, and six or eight others agreed to do so. Then with this money a couple of the members went in and bought the car.

The members paid for the wheat as they received it, paying market price for the same, though the wholesale price was 15% less than retail. Then after the members who had put up the original money were repaid, the balance was refunded in proportion to the amount of grain received by each. The wheat was unloaded direct from the car, which was a pretty cheap way of doing.

Three weeks later a few of the members who had played rather safe and had not bought as much in proportion to their needs as the others, wanted more grain, and the transaction was repeated. As the wholesalers saw that they had a steady customer in the association, it became unnecessary to buy on that basis and now purchasers are made on exactly the same as any business house would receive. Furthermore, as the saving was seen, others joined in, both for buying and selling, till now there is a membership of about 130 poultrymen with a number of others whose applications are in and, a business of nearly $175,000 a year is being done, not including the egg business.

BASIS OF ORGANIZATION.—The association was more by informal agreement than by anything else until November, 1910, at which time it was incorporated by State law for co-operative organizations. Shares of $20 par value were issued, no person to have more than one share. Soon a warehouse was erected, which was open one day a week at first, then two days, and now it is open every business day.

Goods are bought at wholesale and a safe margin made for the price. At the end of the year a dividend of 8 per cent is declared on capital sock, provided net profits are sufficient, and 5 per cent of the net profits remaining are put into the treasury. The remainder of the net profits are divided according to the amount of purchases per member. Last year this was three per cent, members buying $1000 worth of goods getting back $30.

This refund is not the only profit, for there is a good saving made in the price of goods. What this saving is it is hard to say, but the fact that approximately $20,000 worth of goods were purchased by non-members during the year shows that non-members think that prices are better than they could get other places.

New members are admitted on the purchase of one share of stock subject to the approval of the directors. Shares are non-transferable and when a member, through removal, going out of the poultry business or otherwise, wishes to withdraw, the association buys back the stock at par. Since incorporation there have been only six withdrawals, which shows that there is not as much moving around about Hayward as in most places. The purchases by members, by the way, amounted to a little over $53,000 in the year, showing that most of the business is done by members.

The only materials purchased are poultry foods like wheat, bran, milled feeds, grit, meat scraps, etc., together with what patent feeds and powders are needed. Nothing has been done in selling the poultry, though possibly this may be taken up later.

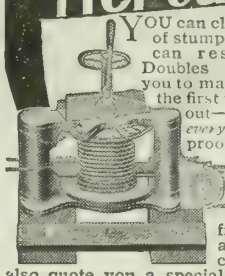
There is nothing revolutionary in the system or spectacular about the success. A number of poultrymen simply got together, sold their eggs direct, purchased their own feeds, others joined them and are getting along nicely, getting more for what they sell and paying less for what they buy, which after all, is what we all want to do, a thing that will solve somewhat the high cost of living.

PENNANT STRAIN BARRED and BUFF PLYMOUTH ROCKS.

A few choice cockerels and pullets left Eggs for hatching after January 1st.

JAS. M. MONTGOMERY,
4360 Fleming Ave., Oakland, Cal.

Pull 100 Stumps A Day—With The Hercules



YOU can clear an acre or more of stumps a day. No stumps can resist the Hercules. Doubles land value—enables you to make $1200.00 on 40 acres the first year after stumps are out—and $750.00 in crops *every* year after. Get the proof. Why not

Write Us Now

Book tells all the facts—shows many photos and letters from owners—tells all about the many Hercules features. We'll also quote you a special money-saving price proposition that *will interest you.* Address

HERCULES MFG. CO. 112 22nd St. Centerville, Iowa

AXLE & GREASE

LARGE HANDY BUCKET C&S — SMALL CAN

WHITTIER COBURN CO. S.F. SOLE MFRS.

you owe

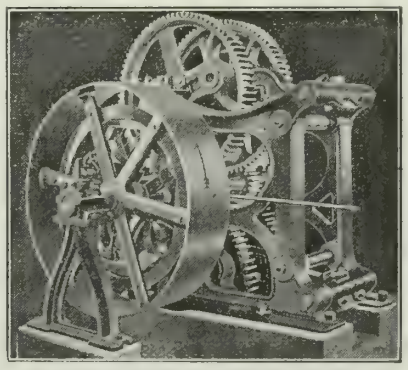
it to yourself to thoroughly investigate the Pomona Deep Well Pump from every standpoint before placing your order for a water lifter.

Pomona Deep Well PUMPS

Through twelve successful years we have been making and installing this "King of all pumps," and we know that it will do the work for which it is built more efficiently—with less jerk and jar, greater volume of water, steadier flow, for a longer length of time, and at less cost for upkeep and repairs—than any other.

We ask the privilege of demonstrating these facts to you.

This is a right side-rear view of the Pump Head that does the work



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The Home Circle.

The Daffodils.

I wandered lonely as a cloud
That floats on high o'er vales and hills
When all at once I saw a cloud
A host of daffodils
Beside the lake, beneath the trees
Fluttering and dancing in the breeze.

Continuous as the stars that shine
And twinkle on the milky way,
They stretched in never ending line
Along the margin of the bay.
Ten thousand saw I at a glance
Tossing their heads in sprightly dance.

The waves beside them danced; but they
Outdid the sparkling waves in glee;
A poet could not but be gay
In such a jocund company.
I gazed—and gazed—but little thought
What wealth the show to me had brought.

For oft, when on my couch I lie
In vacant or in pensive mood,
They flush upon that inward eye
Which is the bliss of solitude;
And then my heart with pleasure fills
And dances with the daffodils.

—Wm. Wadsworth.

He Saved Lincoln.

In 1861 the Philadelphia, Wilmington & Baltimore road was the only direct line connecting New York city and the New England States with Washington; that this railroad should be kept unbroken at this critical time was of the utmost importance. It was readily discovered that a plot existed among the Maryland secessionists to cut the line by burning the bridges; but the first hint of the real purpose of the conspirators came to Pinkerton in a letter from the master machinist of the railroad, Mr. William Stearns. He wrote:

"I am informed that a son of a distinguished citizen of Maryland said that he had taken an oath with others to assassinate Mr. Lincoln before he gets to Washington."

This letter was received on February 10—the day before Mr. Lincoln left his home in Springfield, Illinois, and started on his Eastern tour en route for Washington.

Pinkerton sent for more of his men, and redoubled his efforts to learn something tangible of this or any other plot. Time passed rapidly. Such a conspiracy, well organized, did exist—he learned enough in Baltimore to convince him of that; also — through Stearns — that a branch of the organization was at Perrymansville in the guise of a cavalry company. Webster, who had been withdrawn from there, was hurried back, and within twenty-four hours had been enrolled as a member of the company. Then, handicapped by the shortness of time, he made a supreme effort to gain the confidence of the inner circle of conspirators, who alone were in the principal plot. Few men could have succeeded as Webster did, few has such a personality as his. Naturally he was of a quiet, reserved disposition, seldom speaking unless spoken to, and never betraying emotion of excitement under any pressure of circumstances; but with the need, his reserve would vanish, and he would become a genial, jovial, convivial soul, with a wonderful faculty for making every one admire and like him. In a few cunningly-worded sentences he would rouse the blood of his hearers until it fairly boiled with indignation against the Yankees and Abe Lincoln.

"Webster's talent for sustaining a role of this kind amounted to positive genius; in a lifetime of detective experience I have never met one who could more readily adapt himself to circumstances," Allan Pinkerton has written.

It was with such a weapon that Webster was making this great fight.

The tour of the President-elect was rapidly drawing to an end. Webster, consummate actor, was making haste slowly; grave, fiery, serious, boisterous—each at the golden time, he played with a masterful hand upon the excited, high-strung conspirators. From the first his efforts had been covertly directed against the cavalry company's officers; they were in the secret or no one was. At last, one morning, after drill, the captain with much secrecy asked him to call that night at his house, "and say nothing about it." How the time must have dragged until the appointed hour! But with the first step he made into the room whose windows were hung with heavy quilts and blankets he knew that success had come at last. Webster was introduced to three strangers in the group, members of the league from Baltimore; then took his place at the table with the rest and listened—joining in now and then with a word or two—as they discussed the plans for the assassination of Abraham Lincoln at the Calvert Street Depot in Baltimore, on February 23. The plans were fully matured except for the selection of the person to fire the shot.

The story of how Allan Pinkerton placed his proofs of the conspiracy before Lincoln in the Continental Hotel in Philadelphia, on the night of February 21; of the spiriting of Mr. Lincoln out of Harrisburg next evening back to Philadelphia in a private train—while Harrisburg, with telegraph wires secretly grounded, lay cut off from all communication with the outside world; of the passage through Baltimore in the dead of night; and the safe arrival of the President-elect, accompanied by Allan Pinkerton and Colonel Lamon, in Washington at six o'clock in the morning of the day he was expected in Baltimore, has been told again and again, but Timothy Webster's part is known to but few.—W. G. Beymer, in Harper's Magazine.

Mother.

There is one form sacred in memory's gallery, one face which time can never erase. It is that of our mother, the dear, gentle compassionate mother who loved us ere we knew what love was, and taught us the right ere we knew the wrong. She sang us to sleep in the innocence of childhood, and awoke us with loving kisses on the bright mornings of long ago. Her eyes beamed with joy as she blessed us at life's dawning and spoke a tender farewell, as the life-sun went down. She watched us to school in the summer sun and taught us our lessons by the wintry fireside. From childhood's morn to manhood's hour she was ever at hand to soothe and console, and when at last we must go forth from the old home and reside, how tenderly and affectionately she caressed us and kissed us good-bye—then waited and hoped and prayed that all would be well. From the first to last her love was the same—it knew no bounds. With cheers for the right, tears for the wrong, she was happy in our joys, sad in our sorrows, and she washed away our errors in the flooded rivulets of the soul. Her conscience was her guide and her family her greatest joy. She loved her home more than glittering fashion, and

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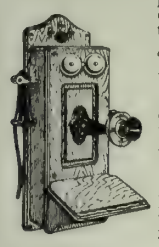

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Kewanee System of Water Supply

Mr. Fiero says: "The Kewanee System does all you claim for it and out here in the country, we are enjoying the comforts of city life. You have my permission to use my letter. It will please me to help someone else get a "good thing."

With the Kewanee System, the tank is located in the **cellar** or buried in the **ground**; and the water is delivered by **air pressure**. No attic or elevated tank to leak, freeze, overflow or collapse. A Kewanee Tank will last indefinitely. 60 to 75 pounds pressure.

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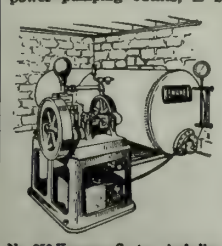

No. 250 Kewanee System, including gasoline engine. Other plants include hand, electric, windmill and other power pumping outfits.

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sought honor in the consciousness of doing good.

Mid afflictions, trials and suffering years she lived for a purpose—that we might succeed. We loved her as we loved no other, and pleasant memories cluster around her peaceful grave. She is gone now—the kind heart has ceased its tender murmurings and the voice so full of love and sympathy is hushed in the silence of the winding-sheet, but floating up before us in the infinite vast we see a form radiant with the splendor of noble virtues, pure and spotless as the new-fallen snow. It is facing the throne of the eternal right, and as it draws near to that beautiful realm, the glittering luster of heavenly sheen light up the view and we behold the sacred form of our loved and loving mother—safe at last in the peaceful home of the soul.

The Kitchen Floor.

If you have never had your kitchen floor painted do not allow another summer to pass without trying it. Any woman can do the work. Paints of any color can be bought already mixed, and are so inexpensive, while the amount of labor saved is so great that we often wonder why there should be a kitchen floor in the land that is not painted.

Scrub the floor clean and let it dry thoroughly, then give it two coats of paint, allowing each coat plenty of time to dry. A little Japan dryer added to the paint will hasten the drying, which is important when one needs to use the room all the time.

It is usually better to do the painting in the evening after the supper dishes are washed and leave the doors and windows open. If not quite dry in the morning and you cannot cook breakfast in some other room, lay boards across where you walk the most to keep it from being tracked.

If you prefer an oiled floor to a painted one, get a gallon of linseed oil and heat a quart of it until almost boiling and apply it with an old paint brush, which should be clean, of course. Two coats are usually needed.

The care of an oiled or painted floor is important if you would keep it in the best condition.

Mop the floor once a week, using a suds of good soap; rinse it with clear water and wipe dry. It is never necessary to use a scrub brush and the water should not be hot.

Do You Need a Work Basket?

To those who need a work basket and cannot afford to buy one, this may be of use. Purchase a cheese box from your grocer and paint the cover and outside of box. Then line the inside of box and fasten a pincushion and needle case inside on the sides. The legs may be made of two common broom handles. Saw the handles in half and polish three of the pieces, tacking them to the box and cover, the cover being placed about 12 inches below the box. The cover forms a convenient pattern holder and I find the basket very useful.

Burnt Dishes.

Don't waste time and labor trying to scrape clean blackened or scorched baking dishes or cooking platter. Rubbing them hard with damp salt is a good and effectual though tedious way of doing the job. But if a little ash and water are placed in them and they are allowed to heat slowly at the back of the grate they may be quickly scoured back to their original cleanness. Any brown discolorations on cups and saucers caused by stale tea or coffee can be got rid of quickly by rubbing them with a flannel dipped in whiting paste.

A Scotch class was examined in Scripture. "Can any boy or girl here tell me how Noah would be likely to use his time while on the ark?" asked the inspector. One boy timidly replied, "Please, sir, he wad fish." "Well, yes, he might," admitted the inspector. Another little fellow waved his hand excitedly, and said, "Please, he couldna fish vera lang." "What makes you think so, my little man?" "Because there were only twa worms in the ark."—Christian Commonwealth.

Sober Truths.

There are no self-made men. We are what we are made by others.

If I can touch one human heart for good, I have not spoken in vain.

The man who stops to calculate how much good will come to him out of the good he does, will never do any good.

A noble life cannot be built upon an arithmetic.

You cannot escape difficulties by avoiding religion.

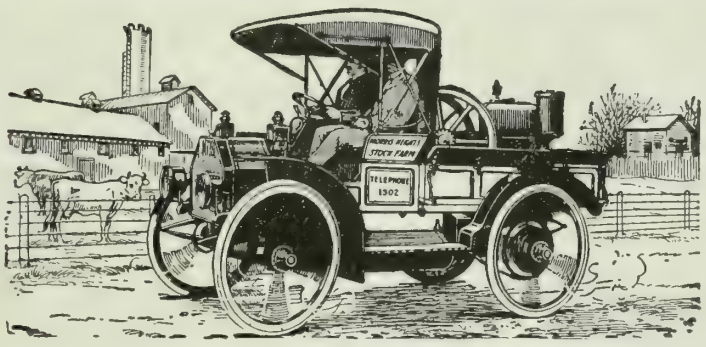
Man has a mind and a soul, and the mind is greater than the man and the soul is greater than the mind.

Love and peace accomplish far more than force.

Mystery doesn't bother us in the dining room, it is only in the church.

People who worry most about what they cannot understand spend the least time living up to what they cannot help but understand.

Without God there can be no true happiness. All that the world can offer cannot recompense man for the loss of his soul. It is only by self-control, by abstinence from the world's pleasures, by mortification of our appetites and our passions that we can hope to gain that superlative, that complete happiness—the reward God has promised us all in the end.—Rev. Father Murtagh.



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THE MARKETS.

San Francisco, Oct. 1, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Little wheat has come in for the past few days, and trading has been of a very limited nature, leaving the quotations at the same level as before.

California Club, ctl	$1.52½@1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½@1.55
Northern Bluestem	1.67½@1.70
Northern Red	1.55 @1.65

BARLEY.

Some foreign shipments are being made, both here and from Northern ports, but the local market is very quiet at the moment, and prices are unchanged. Offerings on the spot are light, with prices firmly held, but the December option is easier, with very little trading.

Brewing and Shipping	$1.40 @1.45
Choice Feed, per ctl	1.35 @1.40
Common Feed	1.30 @1.35

OATS.

Red seed oats are quoted a little higher. There is considerable inquiry for seed at present, and a good rain would bring quite a strong demand. The movement of feed grades is keeping up on about the usual scale at the old prices.

Red Feed	$1.65 @1.85
Seed	2.25 @2.30
Gray	Nominal
White	1.55 @1.60
Black Seed	2.75 @3.25

CORN.

What little Eastern corn comes in is peddled out in small lots, the high prices having curtailed the demand. Values are largely nominal, but there is an easier feeling locally.

California Yellow	Nominal
Eastern Yellow	$1.95 @2.00
Eastern White	Nominal

RYE.

This grain receives little attention, and the limited offerings are held at the old prices.

Rye, per ctl	$1.45 @1.50

BEANS.

Harvesting is well under way in the river district; and arrivals are gradually increasing, though new offerings so far consist mostly of the white varieties. Varying reports have been received on the crop, but the output seems to be considerably smaller than last year, pinks especially having been damaged by the hot spell. The market shows a little more steadiness, the only change this week being a slight advance on blackeyes, and comparatively good values are expected for all varieties. The shipping movement is not very heavy, but is picking up a little, and considerable buying is expected during the next month. It is reported that there is still considerable old stock of some varieties on the market.

Bayos, per ctl	$3.25 @3.40
Blackeyes	3.50 @3.60
Cranberry Beans	3.75 @4.00
Horse Beans	1.75 @1.90
Small Whites	5.00 @5.25
Large Whites	3.10 @3.25
Limas	4.75 @4.85
Pea	Nominal
Pink	2.75 @2.85
Red Kidneys	3.25 @3.40
Mexican Red	3.40 @3.65

SEEDS.

Some imported lines of alfalfa are coming in, and are held at an advance over the old quotations. There is some trading locally, but the movement is not yet very active.

Alfalfa	12½@15 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	7 @ 7½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

Values remain as for some time past, and there is little feature to the local market. There is considerable export business to the Orient from the North.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.65 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

The amount coming in from the country is still decreasing, especially grain hay, a large part of the arrivals being alfalfa. The market, however, continues to drag, with little demand and considerable difficulty in cleaning up the daily offerings, as the local trade has plenty of hay in storage. Offerings of grain hay in the country, however, are light, as there is now very little left in the fields. It will soon be necessary to draw from the warehouses, and if there is any improvement in demand, this should bring a slight advance. Alfalfa is still being cut, and offerings at many places are large, with little demand here. There is a fair movement in the country, but the demand is hardly equal to the supply, and values are weak, with little indication of improvement. Good straw is scarce.

No. 1 Wheat, or Wheat and Oat	$15.50@16.50
do No. 2	14.00@15.50
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 95c

FEEDSTUFFS.

Values in all lines stand as last quoted, with about a normal demand for most lines, though corn feeds are rather quiet.

Alfalfa Meal, per ton	$18.50@19.50
Bran, per ton	25.00@26.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	29.50@30.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Rolled Oats	34.00@35.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

There has been considerable shipping demand for onions, which together with a large speculative movement in the local trade, has brought an advance in prices. General garden truck is rather easy, with liberal supplies in several lines. Tomatoes have been especially plentiful, and canners are buying all they want at 20c, while even choice lots will hardly bring last week's prices. Offerings of green corn are light, but consist mainly of poor stock, which brings the market down, and a good deal is sacrificed at irregular figures. Green peas are easier, while summer squash is higher. Other lines are held about as before. It is reported that the output of cabbage, cauliflower, etc., in the San Mateo district will be extremely light.

Onions: New Yellow, River, ctl	$ 1.00@ 1.25
Garlic, per lb	6@ 8c
Cucumbers, per box	40@ 65c
Green Peppers, box	25@ 50c
Carrots, per sack	75c
Green Peas, lb	4@ 5c
String Beans, lb	2½@ 3c
Summer Squash, lug box	40@ 50c
Green Corn, choice, sack	1.00@ 2.25
Okra, box	25@ 35c
Tomatoes, box	20@ 60c
Eggplant, box	40@ 50c
Lima Beans, lb	2@ 3c
Sprouts, lb	3@ 4c
Celery, doz	30@ 40c

POTATOES.

Salinas and good river stock are moving fairly well, bringing the former prices, though the call is hardly as large as last week. Some Oregon burbanks are now offered at the quotations below. Sweets are lower, with ample supplies.

Salinas, ctl	$ 1.75@ 1.85
New River Whites	85c@ 1.00
Sweet Potatoes, per ctl	1.25@ 1.50
Oregon Burbanks	1.25@ 1.35

Dairy Produce.

POULTRY.

Eastern offerings are not so heavy this week, but there has been quite a large shipping movement from nearby points, keeping the market well supplied, and young chickens move slowly. Small broilers, however, are a little higher. Geese are selling at an advance, and turkeys are receiving more attention than for some time past. Dressed turkeys are quoted for the first time in several months.

Large Broilers, per lb	23 @24 c
Small Broilers, per lb	24 @25 c
Fryers, per lb	23 @24 c
Hens, extra, per lb	18 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	23 @24 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	2.00@ 2.50
Ducks, doz	4.50@ 6.00
Turkeys, live, per lb	24 @25 c
do dressed	25 @28 c

BUTTER.

Extra butter shows a little more strength this week, with the local demand in good shape, and the market is firm at the moment with an advance of 2c on the day. The lower grades are quiet and weak at the old figures.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	33	33½	33½	33½	33½	35½
Prime Firsts	30	30	30	30	30	30
Firsts	29	29	29	29	29	29

EGGS.

The demand for extra eggs has been decidedly strong, and prices have been going up steadily, the weeks advance amounting to 8½c, with continued firmness. Pullets also have been marked up a little, but are weak, with considerable competition from Eastern and storage stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	39	39	39½	42	43½	47
Selected Pullets	32	32	32	32	32	34

CHEESE.

Arrivals have been rather light, and fancy flats are a little higher, though Y. A.'s have lost ½c. Monterey cheese is higher.

Fancy California Flats, per lb	16½c
New Young Americas, fancy	16 c
Monterey or Jack Cheese	16 @18 c

Deciduous Fruit.

The only new feature in the berry market is the arrival of fair lots of cranberries, both Coos Bay and Eastern, the supply being sufficient to warrant definite quotations. Other berries stand as before. Bellefleur apples are quoted a little lower, and a decline is expected in other lines, though at present values are well maintained. Buy is accordingly light. Bartlett pears from cold storage bring the same figures as before, with a very moderate movement. Peaches in lugs find a very good demand, and bring better prices than last week, though small boxes are in better supply and lower. Carriers, however, are held at 60 to 80c. Plums find a good demand at better prices, while figs are unchanged. There have been enough persimmons sold to warrant quotations, though the demand is limited. Grapes show numerous changes, Malagas and Tokays being higher, although Seedless, Muscat, and black varieties are quite plentiful and lower. Large river cantaloupes show a narrower range, but nutmegs are offered freely, and ripe lots sell as low as 15c per box, while good watermelons are doing better.

Strawberries, chest	$ 2.25@ 4.50
Blackberries, chest	2.00@ 4.00
Raspberries, chest	4.00@ 6.00
Huckleberries, lb	4@ 7c
Cranberries, Coos Bay, box	2.50@ 2.75
Cape Cod, bbl	8.00@ 8.50
Apples:	
Gravensteins, box	1.50@ 2.00
Greenings	75c@ 1.00
Bellefleur	1.00@ 1.25
Newtown Pippins	1.15@ 1.50
Common	50@ 75c
Pears, Bartlett, box	1.75@ 2.25
Other varieties	75c@ 1.25
Peaches, box	45@ 50c
Lugs	65@ 90c
Plums, crate	65c@ 1.00
Figs, double layer, drawer	50@ 70c
Cantaloupes, River, lugs	60c@ 1.00
Watermelons, per dozen	1.75@ 3.00
Grapes: Seedless, lugs	1.00@ 1.25
Malaga, crate	65@ 75c
Muscat	60@ 75c
Black, lugs	50@ 65c
Tokay, lugs	90c@ 1.00
Cornichon, crate	65@ 85c
Quinces, box	50@ 75c
Pomegranates, box	75c@ 1.00
Persimmons, box	1.00@ 1.50

Dried Fruits.

There is nothing new this week as far as values are concerned, but the market is in very fair shape, with a good demand from outside markets, and a decidedly firm feeling in regard to prices for shipment. Old stock appears to be well cleaned up now in all markets, and buyers show increasing interest, though there does not seem to be any great speculative interest. Buying for the most part has been for the regular fall requirements, but in view of the short crop this has already taken up a large proportion of the output, and there is every prospect of a great scarcity later on. It is reported, in fact, that some concerns have sold short on prunes, and are having difficulty to cover their sales. Buyers are still active in the country, and good offerings find a ready sale at about the present quotations. Raisins are not especially active in the East, but there is a good all-round movement, and prices have been further advanced on some lines. Peaches also are moving off fairly well, and apricots are extremely firm.

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Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

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WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

WANTED—Burbank standard cactus leaves; highest prices paid. Address Sempervirens Cactus Farm, Santa Rosa, Cal.

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FOR SALE—60 acres near Newcastle, Cal.; 12 acres in trees and vines under ditch; 23 acres in Zante currants (my currants took first prize at Seattle Exposition); 7 acres hay land, and 8 acres timber. Good house, barn, chicken house, packing house, etc. Completely stocked with implements, wagons, etc., including a good team of horses and harness. For particulars, price, and terms, write S. Hossli, Newman, Cal.

FOR SALE—20 acres, Merced county, orange, fruit land, good soil. R. AXTELL, McCormick, Wash.

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I represent a tract of land now being divided. It is in Tulare county with foothill protection on three sides. The soil is choice, without trace of alkali. Water is obtained at 100 feet with a lift of 15 to 25 feet. Electric power is cheap. A new railroad is now building through the tract and a new town site will soon be dedicated. No portion of the tract will be more than three miles from railroad station and packing house. 20 acres of this land can be made to yield an income of $2000 to $4000 annually. 10 acres can make a good living for a family. The price averages about $150 to $160 an acre—some lots lower, a few lots higher. We ask cash payment of one-fourth the purchase price, then wait six years for the balance. Low interest. Send for our illustrated booklet with map. There are special reasons why you should buy in the next six weeks—ask me why. W. P. McKEE, 546 Title Insurance Bldg., Los Angeles.

BEFORE COMMENCING OUR REGULAR SEASON'S advertising campaign, we desire to call the attention of plant lovers, fruit growers and our thousands of customers to the fact that we not only have a magnificent and complete line of fruit and ornamental stocks, but in addition to this will have many novelties to offer which will be worthy of attention. We solicit inquiries NOW and are prepared to offer special inducements on many lines. Mail us a list of your probable wants NOW and permit us to figure with you. Our firm is backed with 30 years of an honorable, straightforward business career and we always have our customers' interests at heart. Our annual ILLUSTRATED PRICE CATALOGUE will be ready for distribution about November 15th. If you are interested let us hear from you. FANCHER CREEK NURSERIES, INC., Box 180, Fresno, California.

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MISCELLANEOUS

AUSTRALIA

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To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay Ct., San Francisco.

ALFALFA HAY—I have some No. 1 alfalfa, and it will pay you to write me for prices before buying. W. G. COPPERNOLL, Gridley, Cal., R. D. 1.

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with very few left. The New York Journal of Commerce says:

"In all lines of California dried fruits a decidedly strong feeling obtains here and on the Coast, owing to the shortage in the current season's crops. There is no speculative manipulation this year, the market resting on normal conditions of supply and demand. According to the best posted authorities, there are three fundamental reasons for the strength shown by California prunes of the 1913 crop. First of these is the shortage in deliveries by growers to packers on contracts made earlier in the season, these deliveries running anywhere from 10 to 20% short of the quantity contracted for. The second cause for the present strength of the market is said to be due to unwise sellers piling up a volume of tonnage at prices which they have been undoubtedly unable to cover, or if covered, the shrinkage has reduced the quantity. Another reason for the unsettled conditions prevailing in Eastern markets is said by competent authority to be due to the fact that a rather large short interest has been created in large Eastern markets by operators who, rejecting crop estimates sent out from the Coast some weeks ago and since verified by actual results, have sold short and this shortage has finally become a factor to be reckoned with. There are offerings of the three sizes from some packing sources on a 6c. f.o.b. four-size bulk basis, but the general inside quotation is 6¼c, and some sellers are asking more. The spot market is firm, though the demand as yet is light. Peaches are held firmly up to the quotations, though the demand is not important. Late advices from the Coast quote as inside 5¼c for standard, 5½c for choice, 5¾c for extra choice, and 6¼c for fancy in 50-lb. boxes f.o.b. Coast. The strength of the market is chiefly in the finer grades, the tonnage of which was greatly reduced by the extreme hot weather during the period of maturity. Apricots are practically all out of growers' hands, and packers have little to offer. The market, though quiet at present, is decidedly strong. There is little demand for spot or forward shipment raisins from the trade in this quarter, but the market remains firm on the basis of the higher prices."

Evap. Apples, 1913	6½@ 7 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4 c
Black	2½@ 3 c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4¾@ 5 c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	3¾c
Thompson Seedless	4 @ 4½c
Seedless Sultanas	4 c

Citrus Fruits.

The recent advance in lemons in the primary market met with little response from local buyers, and the demand here has been materially curtailed. Local prices are lower than last week. Limas also are a little lower, while oranges and grapefruit remain as before, with only a moderate demand.

Oranges (per box):	
Valencias	$ 4.00@ 6.00
Grapefruit, seedless	5.50@ 6.00
Lemons	4.50@ 7.75
Limes	10.00@12.00

Nuts, Honey, Hops, Etc.

NUTS.

The new almonds are being shipped East about as fast as they can be prepared for the market, most of the crop having been taken out of growers' hands at the opening prices. Values remain as before. Walnuts are still nominal, but new prices are expected by the end of the week. The crop around Fullerton is said to be rather large.

Almonds, new crop—	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts	Nominal

Local trading has quieted down, as most requirements have been satisfied, and there is no great amount offered at present. Values are well maintained.

HONEY.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

There is no local demand of any moment, but the limited supplies are closely held at the old figures.

Light	30 @32 c
Dark	28 @30 c

HOPS.

Trading in the country has been extremely active of late, and sales around Santa Rosa are reported at 27c, with a good many growers holding for a further advance. Oregon prices are running around 25c.

1913	20@27c

Live Stock.

No change in prices is noted this week, either in livestock or dressed meats. Both cattle and hogs continue scarce, arrivals being hardly equal to requirements.

Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7¼@ 7½c
Medium	6½@ 7 c
Heavy	5 @ 6 c
Hogs: Grain-fed, heavy	8¼@ 8½c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4 @ 4¼c
Ewes	3¼@ 3½c
Lambs: Suckling	5¼@ 5¾c

DRESSED MEATS.

Steers	12¼@12¾c
Heifers	11½@12½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

Prices are pretty well maintained, with comparatively light offerings of fall clip, and more interest on the part of buyers.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

The hide market is steadily held at the present level, as offerings everywhere are limited, and there is a growing demand.

Heavy Steers, over 56 lbs.	13½c
Medium	12½c
Light Steers, under 48 lbs.	11½@12½c
Heavy Cows, over 50 lbs.	11½@12½c
Light Cows, 30 to 50 lbs.	13 c
Kip	13½@15 c
Veal	16½@18 c
Calf	16½@18 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

A small lot of Nevada stock, ranging from wagon horses to light drafters, has come in this week for auction, and it is hoped that better prices will be realized than at the last auction. The market, however, is still in rather poor condition, with considerable stock offered for sale by local users, and comparatively few buyers are taking an interest in offerings from outside points.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500 lbs	100@150
Wagon Horses, 1250 to 1350	100@125
Delivery Horses, 1050 to 1250	75@100
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

There were shipped from Turlock in July and August 539 cars of watermelons, averaging $15.50 per ton, a much better price than last year, though the number of cars was less. Cantaloupes numbered 210 cars (16 less than in 1912), the average price being 85 cents per crate, total value $66,045. The cannery at Turlock has closed. Owing to heavy fruit shipments, the cannery handled only 60,000 or 70,000 cases of peaches.

A fine crop of hemp has been taken off 100 acres in the San Joaquin delta by the Rindge Land & Navigation Company. Bean harvesting in the delta region is going on at full blast.

The Tulare Grange has endorsed the actions of the government in placing money in the banks for the use of farmers, also the action of the State legislature in the passage of the mutual fire insurance law.

Statement of the ownership, management, circulation, etc., of PACIFIC RURAL PRESS, published weekly at San Francisco, required by the Act of August 24, 1912.

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Known bondholders, mortgagees, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities: None.

FRANK HONEYWELL.

Sworn to and subscribed before me this 29th day of Sept., 1913.
(Seal.) C. B. SESSIONS,
Notary Public in and for the City and County of San Francisco, State of California.
(My commission expires May 26, 1913.)

A farmers association, to include in its membership farmers from all parts of Humboldt county, may be formed under the management of Farm Adviser A. H. Christiansen.

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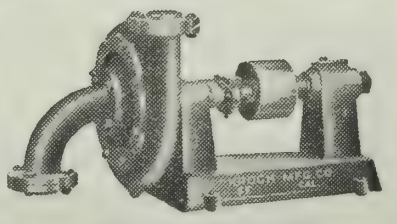
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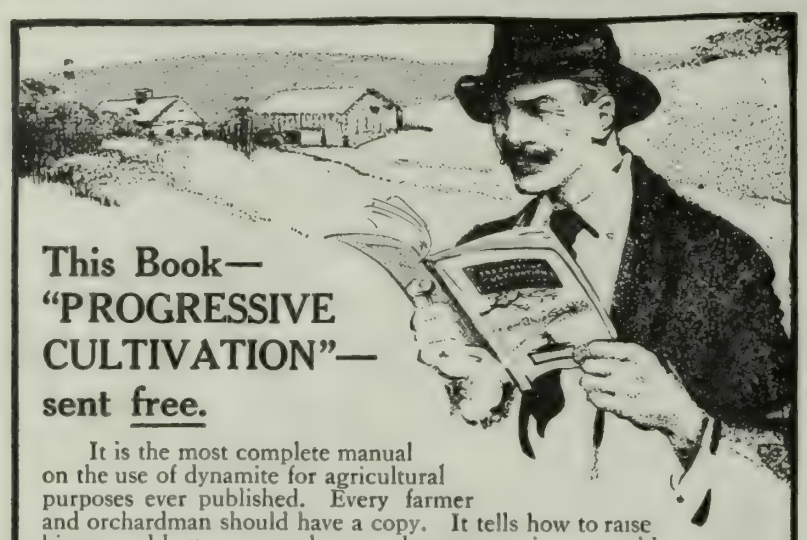

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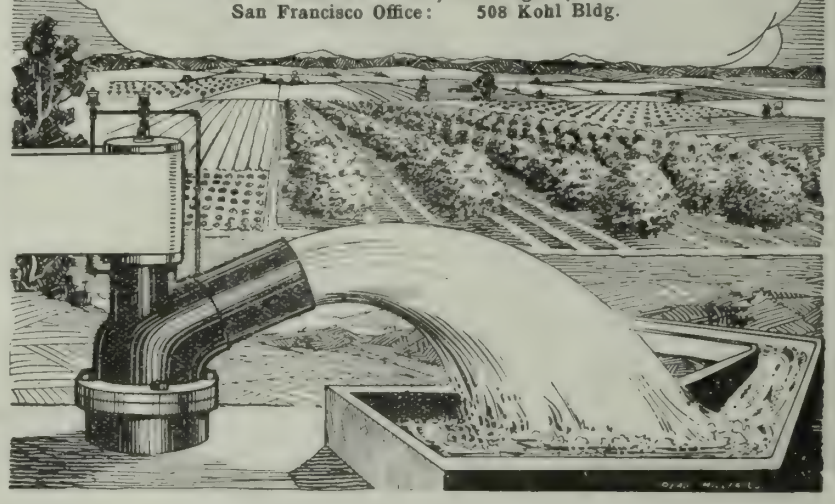

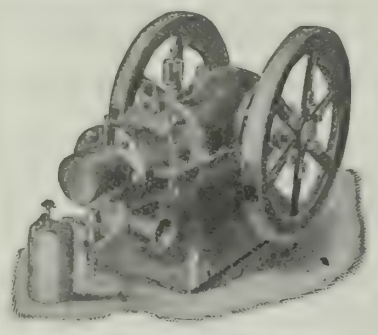

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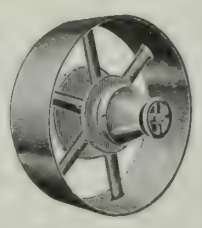

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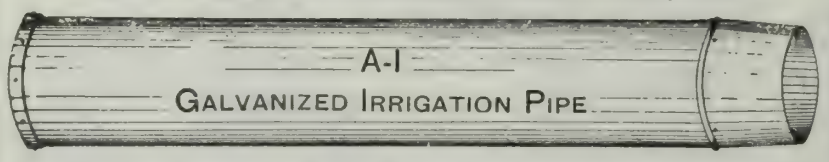

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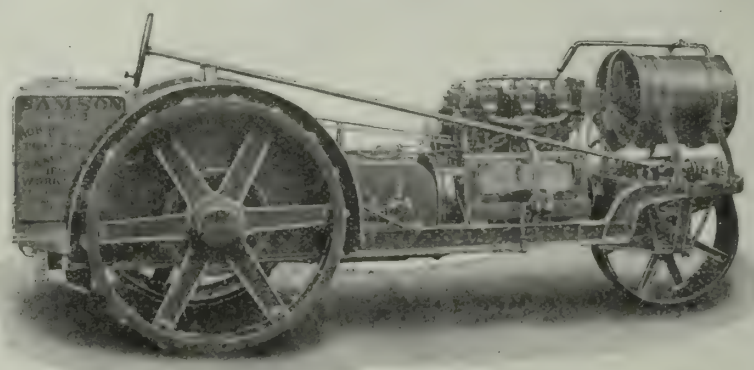

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It is a **ONE MAN** Outfit—and all those in use during the past year have proved big money-savers for their owners. You can secure the same great advantage if you use one. **INVESTIGATE.**

Fitted with the wonderful Samson Sieve—grip wheels—the tractor works easily in plowed ground or on wet, sticky clay and adobe soils. These wheels and the tractor are described in new catalog—just printed.

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SAMSON IRON WORKS

STOCKTON, CALIFORNIA

THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 15. SAN FRANCISCO, SATURDAY, OCTOBER 11, 1913. Fo... ...rd Year.

Irrigation With Electric Pumping.

[Written for the PACIFIC RURAL PRESS.]

Irrigation has two distinct and important purposes: reclaiming the arid regions and forcing the crops on truck farms.

The amount of water necessary on any irrigation project necessarily varies with each district and according to the crops raised. But, no matter how much or how little water is necessary, this amount must be secured either by storage and gravity systems or by pumping from underground water sources.

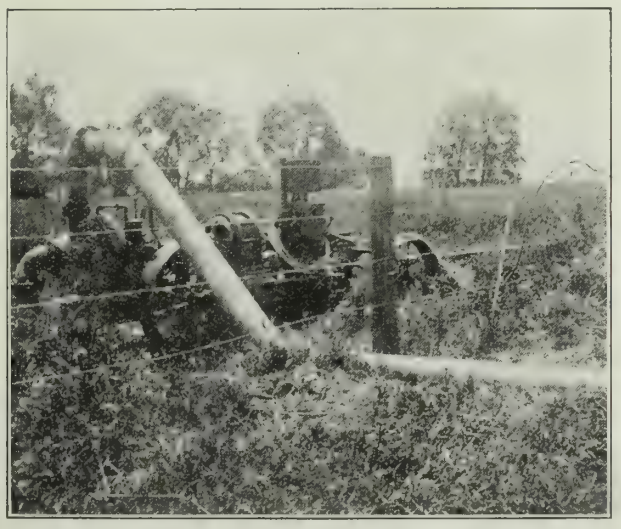
Where water must be lifted from one level to another, or pumped from shallow wells, the centrifugal, power-driven pump must be used to secure an adequate flow of water. Centrifugal pumps are made in all sizes, and it is really astonishing how much water even a small pump of this kind will discharge in a few minutes.

Electric motors are best for driving irrigation pumps because they can be started and stopped at a distance. If the pump-house is located a mile or more away, the simple pressure of a button will start the water flowing in the ditches. Water is immediately available at all hours of the day or night. The operator is also independent of his neighbor's requirements for water, as each pumping plant is complete in itself. No skilled mechanic is required and no attendant is necessary for starting or stopping the plant. Operation costs cease the instant the plant stops, and advantage can be taken of all natural rainfall.

The same electric current used for the pumps can be utilized for lighting the house and barns and for power purposes, such as threshing, grinding, churning, milking machines, repair shops, etc.

The cost of electric power irrigation is very reasonable. Facts and figures collected from sixty small pumping plants in Colorado show that under average conditions a good efficient plant, capable of irrigating 160 acres, through a lift of 25 feet, represented an investment of only $7.45 per acre. Operative costs for such a plant vary between $1.75 and $2.25 per acre-foot of water. If these figures are compared with a similar tract where ditch water rights are $50 an acre, with $1.25 added for maintenance charge (which is very reasonable), there is a considerable saving to the rancher by the use of a pumping equipment.

Electric Motor and Vertical Pump to Orchard Flume.



Portable Irrigation Pump Driven by Electricity.

Where electric current can be had from nearby villages, or transmission lines, an electric-motor-driven pump is far better and cheaper than a gasoline-engine-driven pump. The electric motor is practically indestructible. It will last a lifetime with very ordinary care. There are no wearing parts, no valves, gears, sliding parts, or other details requiring constant attention. A good motor costs no more than a good engine. In the Western States electricity for power purposes is very cheap and easy to obtain. A network of wires reach far out into the farming districts, making it very easy to "tap on" and secure the necessary current. In most cases these lines will be extended for miles to reach a group of farmers desiring motor power, electric lights and other electric convenience.

DEVELOPMENT OF IRRIGATION IN CALIFORNIA.

To assist in bringing about the fullest utilization of the irrigation resources of California, the U. S. Department of Agriculture has recently issued a bulletin on "Irrigation Resources of California and Their Utilization," by Frank Adams, irrigation manager in charge of work in California. This is Bulletin 254 of the Office of Experiment Stations. This bulletin brings out the fact that, despite the extent and importance of its irrigation interests, California has not kept pace with other Western States.

While it has long been known that California contains a very large area of agricultural land needing irrigation in order to develop its highest productive capacity, it has also been known that the State has given much less attention to administrative irrigation laws than have most of the other Western States. The long failure on the part of this State to enact such laws has been due very largely to lack of appreciation of the value of such legislative measures as a means of bringing about the most economical development. The apparent diversity of interests between the northern and southern portions of California, due to the more rapid irrigation development in the latter, has led to differences of opinion on this important point. There are also those who are satisfied to let development in irrigation take its course without legislative guide or restriction.

The importance and the possibilities of irrigation development in the State are revealed by the statement that "the total area of irrigable agricultural land found in the zones of irrigation water supplies, which includes all of the valley lands, the rolling plains of the Great Valley, the arable portions of the Sierra foothills up to about 3000 ft. in elevation, and all of the plateau and desert lands to which some irrigation water supplies are available, is 21,865,200 acres, of which 3,192,646 acres are already irrigated, and 9,699,600 acres are estimated as the area to be ultimately irrigated.

"Of the total irrigable areas found, about 28.5% are in northern California, about 44% are in central California, and about 27.5% are in southern California. Of the total irrigated area, about 15% is in northern California, about 61% is in central California, and about 24% is in southern California. Of the areas it is estimated may ultimately be irrigated, about 35.5% of the total are in northern California, about 44.5% are in central California, and about 20% are in southern California. Of the estimated future increase in the irrigated acreage of California, about 45% is alloted to northern California, about 36.5% to central California, and about 18.5% to southern California."

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Oct. 7, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.32	1.09	1.92	62	44
Red Bluff	.00	T	1.12	98	46
Sacramento	.00	.01	.54	94	46
San Francisco	.00	.08	.44	90	50
San Jose	.00	.17	.52	94	42
Fresno	.00	.33	.44	92	44
Independence	.00	2.52	.41	78	32
San Luis Obispo	.00	.93	.63	92	42
Los Angeles	.00	T	.13	80	54
San Diego	.00	.10	.13	72	51

The Week.

The weather still holds tourists', idlers' and open-air students' delights in fullest measure. The fairs, as our columns are showing, are making an unusual record of attendance and of satisfaction. The highways are full of dust-proof joy-riders by day and night. A growing moon probably never had a better chance for overwork in emotional and sentimental lines than has the one which has been this week standing upright in the sky, pouring down the fullness of its contents—a wet moon, if there ever was one. Hope of rain now seems to rest with this sign, for we get no consolation from the sun spotted, though it be, like the leopard. It floods the sky at setting with sailor's delight and rises pale in the morn without a suggestion of warning. Evidently our comments this week must be dreamy.

Assisted Immigration.

The cosmopolitanism of California, which is frequently noted by experienced travelers, clearly appears in the organization of the new board of Immigration Commissioners provided for by the last legislature and made effective by recent appointments by Governor Johnson. The commission consists of Simon J. Lubin, Sacramento, president; Right Rev. Edward J. Hanna, San Francisco, vice-president; Paul Scharrenburg, San Francisco, secretary; Mrs. Mary S. Gibson and A. H. Fleming of Los Angeles. We base our claims of cosmopolitanism for this group of Californians, chiefly upon the choice which they made for their two highest officers, viz.: Mr. Lubin, a native-son of Hebrew descent with a great inheritance of public spirit and philanthropy from his father, David Lubin, and Bishop Hanna, a Roman Catholic prelate, presumably of Irish lineage, who has a name for broad humanitarianism in the particular matter of protecting immigrants from sharks and sharpers. We confess to a real liking for the appointment of these two men of such diverse origins and trainings, who are widely recognized as having reached a common plane of altruism. We doubt if the combination would have been undertaken by any other State governor than he of California, because no other State has, to such an extent, the world point of view and is ready to act upon it. We look, therefore, for broad and exemplary service from the new Immigration Commission, and surely there is a great outlook and opportunity for it. The members have State money to spend, but none of it for themselves. Their duty is to undertake receiving, distributing and protecting the great number of immigrants expected when traffic through the Panama canal begins.

The commission rightly attacks its problem from an agricultural point of view. Following its organization in Sacramento, President Lubin gave out the following statement: "The first work before the commission will undoubtedly be the preparation of a State survey, showing the distribution of the alien population by race and location; agricultural and industrial opportunities; the social, religious and educational factors in the environment, together with such agencies in a position to co-operate with the commission. Without this as a starting point no work can be successfully carried out."

What Is an Immigrant Worth?

Now that we are to do State work for the guidance and protection of immigrants, and as we are sure to acquire very soon many thousands of them, the per capita value of these new resources is an interesting and important matter. We never saw the proposition better put than it was by Dean Hunt of the University College of Agriculture in a recent talk to the Commercial Club of San Francisco. He said: "The immigration problem that is shortly to confront us is a most serious one. There were over 200,000 more foreign-born people in the State of California in 1910 than there were in 1900. It is estimated that the cost of raising one human being to maturity in the old countries is $1000. This means that California has had a donation in those ten years of $20,000,000. It is estimated that with the opening of the Panama canal this donation will increase to $50,000,000 and possibly more. The question of taking adequate care of this wealth which is expressed in the person of human beings should engage the serious thought and consideration of every citizen of our State."

Of course the value of immigrants is determined by the use made of them and the direction of their energies and potentialities to their own upbuilding and that of the State. If they are thrown down here as the prey of vultures and cormorants, chiefly the scalawags of their own races who will probably come from all parts of the world looking for easy preying. With the Immigration Commissioners, the College of Agriculture and the Development Board working together, this inhuman horde ought to be easily driven back.

The Capitalization of Marriageability.

We really do not know by what association of ideas this theme threads our thinker in this connection, but possibly we recall the way in which an immigrant was turned into a desirable citizen, thousands of years ago in Asia Minor, by a sheep farmer of that country. The farmer's name was Laban and he managed to get fourteen years of free sheep-herding out of a Jew immigrant named Jacob, all through capitalization of the attractiveness of his daughter Rachel. It is true that Jacob, through some dim foresight of the law of Mendel, secured a substantial rebate from the flocks of Laban—but that is another story. The point we would impress is that capitalization of marriageability is a very old agricultural art, and now that we are giving so much attention to sources of rural credit, it should not be altogether forgotten. Many an aging farmer has shuffled off the coil, the farmer and the daughter somewhat synchronously to the end that the farm might have a younger and more energetic manager, the vicinity a more effective citizen and the district school better reason for its existence—all of which go to the upbuilding of the State. And we are disposed to remark that the capitalization of marriageability is not more available in the country than in the city, as this municipal record shows. Declaring that his business would be ruined if the news of his marriage were made public, an applicant for a marriage license, in Milwaukee last week, asked that his name be withheld from publication. "I own a butcher shop and am coining money," he said. "There are over 300 unmarried young ladies living in my neighborhood. Everybody knows that I have money, and the matchmaking mothers send their girls around to my shop with a view to getting me interested. But if they found out I was married they would boycott me and my business would be ruined." And so the license clerk is said to have marked the entry: "Not to be reported for commercial reasons"—which was strictly true no doubt, for the butcher probably allowed him to participate in the profits of the business thus amply capitalized. We understand that this sort of a welcome to immigrants is not to be condemned by the rules of the new Immigration Commission.

A Cowardly Culprit.

But sometimes it does not work out according to the rules of the commission, nor of the Peace Congress, either, even along such a joyful line. This story comes opportunely to bring us down from the connubial clouds: A. Maragliano, a wealthy farmer living five miles from Stockton on the Waterloo road, who pleaded with Magistrate Parker last week to be sent to jail. He is the father of nine children, and his wife had him arrested because he ran his family out of the house. "I would rather be in jail for six months than on the ranch. Send me to jail and I will be thankful," he pleaded. But the judge decided that Maragliano must go back to the farm. And now who can tell whether he went in by the front gate and swallowed a great gulp as he saw the glowing word "Welcome" on the door mat, or whether he just naturally jumped over the back fence and got busy around the barn as though nothing had happened and waited for the old lady to call him to supper. It is like one of those modern mechanical novels which leaves you guessing; and so we have a paragraph without a moral—which is against the rules of this journal.

Those Precious Greek Constituents.

Speaking about immigrants, we cannot refrain one more allusion to those precious Greeks which two Senators wished to get cheap Zante currants for, as noted last week. We will not scold any more about the new tariff; the roof has fallen in and we shall have to wait and see who is alive under it; but those Greeks—it is too funny about them. It is now reported from Washington that while the reduction on Zante currants was being discussed, some one told the Senators from Nevada and New Jersey that there was a big Greek vote in their States. Intent upon preserving the right to their Greek constituents to eat raisins grown in their own country, these Senators pleaded with the tariff conferees to keep down the duty on Zante raisins. Then some California representatives found out at the census office that since 1906 to the present time there have been but four Greek voters in the whole State of Nevada. The Senator from that State was confronted with

this information, and instantly wrote a letter to the President withdrawing his objections to the Zante currant duty. It was too late, however, as the conferees refused to reopen the question. So the four Nevada Greeks have cost the government $50,000 a year each on Zante currants which they probably never see and do not care for. And yet we are told that tariff reform is great economic statesmanship; it is nothing but politics both in principle and methods, and will soon be shown to be very poor politics also.

The Nurserymen's Annual.

The nurserymen of California have surely attained a very desirable self-consciousness, as is evidenced by the richness and variety of the program of their three-day meeting in Fresno, which begins early Thursday morning of next week, October 16. This program covers well the commercial and esthetic branches of California pomology and horticulture, and is perhaps the most instructive and attractive ever drafted in this State. This evidence of development and progress in the propagating phase of our greatest agricultural specialty, fruit growing and home adornment, is certainly very delightful to us. The nurserymen of the present generation are accomplishing just what their predecessors, the pioneers, expected of them and of the State. We were fortunate in having personal acquaintance with most of the pioneer nurserymen and we know that they enjoyed a very broad view of their relations to the development of California. We remember very distinctly that many of them rendered public service, which they esteemed more highly than personal business success, and thus contributed directly to the upbuilding of a great industry which, for the uniqueness of its materials and methods, must be considered the greatest pomological achievement of the world up to this date. That the present generation of nurserymen should be building wisely and with due public spirit upon the foundation laid by the pioneers, is just what the public reasonably expects of them. In harmony with modern methods, they are doing this by organization and by joint work for the upholding of their business to high standards of honesty and intelligence. What the pioneers worked for individually, or by chance contact with each other, their successors are working for by systematic organization and constantly correlated effort. Therefore, it seems to us that the Fresno meeting next week should rally not only all the nurserymen but hundreds of fruit growers who would be benefited by better knowledge of nurserymen's spirit, methods and point of view. The meetings will be held in the new Fresno Hotel—meetings, exhibit hall, etc., in the same capacious building. Of course you will take your wife along and go in for a great horticultural joy before the rains bring in the busy season. If you have to go alone, Secretary Kruckeberg has devised an ingenious scheme by which your relatives can get information of your whereabouts and doings every hour of the day and night while you are away. Thus your absence will be rendered care free to anxious ones at home, and if you do not enjoy it yourself it will be your own fault.

The Rural Press and Personality.

One of the best known teachers of high school agriculture in California recently wrote us these words: "In the horticultural class the other day we were discussing the papers relating to agriculture and horticulture. We mentioned specifically the PACIFIC RURAL PRESS and other California farm papers. The question arose as to preferences, and the class unanimously decided for the PRESS. The determining feature was this: the PRESS showed the influence of a personality." It does not matter, of course, who, of the writing and printing group which is responsible for this journal, stands for this portrait of personality; we are collectively glad to have it in recognizable form, for it certainly does constitute a tangible element of force and always has thus stood in human affairs. We are profoundly grateful also that this recognition of personality, in the case of the RURAL PRESS, comes so promptly, for some persons have had to wait a long time for their personality to catch up with them. Take the case of Adam, one of the most unique and influential personalities the human race has ever acquired; how long he had to wait. Only recently J. P. Brady, a builder and contractor, erected on his home place near Baltimore a monument of cement, stone and bronze, bearing in a sunken panel with sunken letters, this inscription: "This, the First Shaft in America, is Erected to the Memory of Adam, the First Man." Evidently the conspicuous neglect of the personality of Adam got upon Mr. Brady's nerves, for he naively stated in a newspaper interview, that "where so many others of less worth have been honored, he thought it about time that something was done for Adam." It is easily to be seen now, from recent events, that the reason why Adam's personality has been running all these centuries so far behind the schedule is because he did not establish, in his favoring environment, a first class journal of semi-tropical agriculture and horticulture, worth far more than its cost, to wit, $2 per year, payable in advance.

Queries and Replies.

Alfalfa Root-nodules.

To the Editor: I have a field of alfalfa two years old which shows no signs of being inoculated. The oldest field I know of in this locality is five years old, and it also has no signs of bacteria. Does this condition exist throughout the State? Will a field of alfalfa that is not inoculated yield as heavily as one that is? What would be the best method to inoculate a field? Also, what is the average life of a stand of alfalfa in this State?—F. E. W., Los Molinos.

Presumptive evidence that the bacteria are doing business on the roots of the alfalfa is found in the vigorous growth of the plant. From this point of view, California alfalfa is very amply inoculated—as we have supposed, naturally, through previous growth of burr clover and other wild legumes. But this is not absolute evidence of the presence of bacteria, because the alfalfa plant can grow without them when it finds ample supplies of plant food in the soil. Therefore, our correspondent's question, we cannot answer because we have not given enough attention to the root study of thrifty alfalfa plants. Who has looked into the question and can advise us from local field studies? As for the best method of inoculation: not long ago the scattering of soil from a field in which alfalfa is growing well, would have been prescribed. More recently some studies have indicated that capable enemies of the bacteria may also be introduced with them in that way. If this is really true, inoculation by pure cultures of the bacteria applied to the seed before sowing becomes the only rational method. The average longevity of alfalfa might be ten years; but this does not mean much, because longevity depends upon good soil, adequate water, and character of the protection against pests.

Gamboge and Mangosteen.

To the Editor: Is the gamboge tree of the same family as the orange, and does it grow profusely in the tropical climates of the Americas? I have a friend who has sent me some seedlings of the mangosteen from India, and she said I could graft them upon the gamboge tree when I go to Santo Domingo next winter.—S. R. T., San Francisco.

The gamboge tree does not belong to the citrus family, although the fruit somewhat resembles an orange. You can get better information concerning its possibilities after you have reached the West Indies. There is nothing in it for California. The mangosteen is included in the genus Garcinia, which also covers the gamboge tree. This is the reason why your friend advises you that you can graft it upon the latter. She probably knows more about it than we do.

Jerusalem! Artichokes Again?

To the Editor: I should be much obliged to learn your opinion of Jerusalem artichokes as hog feed. Is there any material difference between the white and red variety?—M. T. R., Bakersfield.

Some months ago we pronounced our ultimatum on the continued serviceability of Jerusalem artichokes, to the effect that they were not worth consideration. We have never found anyone who had continued to grow them long. Although many start in with a great burden of enthusiasm, the fizz soon goes out of it. We therefore called upon all to demur to our complaint, or judgment would be entered by default; no one objected, and it was so ordered. As our ultimata are on the Mexican order, we do not hesitate to repeat our challenge in the hope that some one will take it seriously. If anyone likes artichokes for hogs, let him speak or else forever hold his peace. The Red Brazilian artichoke is held to be more productive than the White. We have no respect for Jerusalem artichokes except as a table vegetable and for salad timber.

Gravensteins and Chestnuts.

To the Editor: I have land in Placer county at an elevation of about 2500 feet which I should like to plant trees upon. Do you think the Grevenstein apple would flourish there? Is there any chestnut tree that would grow there with commercial success?—Owner, San Francisco.

It is not safe to give an opinion concerning the suitability of tracts of land for fruit without seeing the land, comparing it with other lands in the district upon which fruit trees are being successfully grown, etc. The Gravenstein apple is more successful in the coast region than in the interior, but still there are interior situations where the trees are profitable. It would not, however, be safe to predict success without more knowledge of your situation. The Gravenstein requires good deep soil, and adequate and equable moisture conditions. There are places in the foothills, as in Amador county, for instance, where the Italian chestnuts are very successful.

The Plants Will Have to Tell You.

To the Editor: In the foothill region on the west side of the Santa Clara valley, at about 700 feet elevation, I am having some land cleared of greasewood and poison oak. The land slopes to the north: soil black and coarse for several inches with half mold: plenty of moisture; there are ferns growing and a heavy growth of oak, laurel, buckeye, willow, and elderberry trees. The land is too steep and broken up to plow very well. What grasses will grow well under the trees and perhaps furnish pasture for cows?—S. R., San Jose.

The grasses which produce best results with a moderate amount of moisture in California are Australian rye grass and orchard grass. The seed should be sown at the beginning of the rainy season. Only an experiment will tell whether the particular piece of land has moisture enough to maintain life during the summer.

Money in Plants for Transplanting.

[By Our Associate Editor.]

People who do not make their living from the soil, but want to do so, often are prevented from going back to the farm because they don't know just how to go about it, or because they have not the capital to buy and stock a good sized place. This little story is of a Lodi merchant who had to get away from store keeping and has made a fine living from three city lots, and the living is getting better all the time. An equally important point is for the farmer or the suburbanite, who might well cut down expenses or cut out middlemen's profits by doing himself what he ordinarily pays others for doing, that is, raise his own tomato and such plants, useful or ornamental, that he often buys from store keeper or local small nurseryman.

G. F. Madison four or five years ago was in the general merchandise business in Lodi and decided for his health's sake that he had to get out of it. The problem was how to do so and he puzzled over the way to get into a line of farm work where the amount of competition would be least. The answer was right at hand, and not far off, where most people look for success. Like all stores that supply people who have gardens, his store carried tomato and cabbage plants and other vegetable or flowering plants that some people start and other people try to bring to maturity. These all came from a firm in Sacramento that raises such things, and the amount bought each year ran up to a very comfortable sum. He decided that it was worth while trying that out, and in his back yard got a hotbed started, with tomato, sweet potato and several other varieties of plants growing. These were sold to good advantage, and for four years the storekeeping has been only a memory and plant production the sole occupation, and a very profitable one. There is no farm to it, but simply three town lots, with a total area of 110 by 157 feet, space for house and yard being taken out. Three other lots are to be added to it, the business has grown so.

How It Was Done.—If a person asks how the necessary experience to succeed in such a venture, a decidedly different line of work from storekeeping, to be sure, was gained, it will be hard to answer. Some people have a natural knack with plants and everything that they touch grows. Mr. Madison knew what plants were wanted and what they should look like, for he had sold them. He also knew what every man should know of the few general facts about hotbeds and cold frames, and the rest came of itself. For some greenhouse work with house plants a knowledge of methods was obtained from books and visits elsewhere, but not so with the growing of the ordinary vegetables. Whenever things did not work well methods were changed as reason would indicate, and that is about all that can be said.

Some time ago one of the local papers gave a little account of his success, and a friend said: "I should think you would keep a good thing like that to yourself, to keep off competition." There is no need to worry. In the first place, only a few people who might try would make good, and in the second place the market is bare and hungry for just that kind of stuff. And besides, the kind of people that usually do things that are worth while are the kind of people that are worth following in generosity and desire to be useful.

The Japanese, for example, are great for taking up any line of work that they see a white man making good at, and Japanese are very skillful at this intensive gardening and like the work. One started up such a plant and lasted a year. He made good at the growing, but did not make good at the selling. Probably Mr. Madison's store experience helped him a whole lot in getting rid of what he raised. Anyway, he averages a couple of hundred dollars a month from his work, and it is growing to beat the band.

As far as the market is concerned, it seems more than wide. A large canning company wished to order 260,000 tomato plants this spring, enough to plant 200 acres. Naturally they did not get them. Regular patrons come first, anyway, and then special orders are taken. Another concern, a nursery company, wanted to order 10,000 boxes, 100 in a box. Altogether Mr. Madison states he could sell twenty times what he raises.

One time he advertised plants and says "Never again." He was so swamped with orders that he had to return all sorts of money, and it hurts to return money. Besides, the regular trade takes all he can raise.

The larger part of the business comes from the seed houses that supply private gardeners or amateur gardeners with tomato plants and such things. In fact, one of these first told us of the place.

When the first big lot of plants had to find a market Mr. Madison wrote to the Morse Seed Company, from whom he used to buy seeds for the store, and they took a lot of his goods, and the rest of the business came by natural growth. The other leading seed companies also proved very desirous to get plants, and he sells to all in northern and central California. Then, also, every storekeeper wants some plants, and does not order them from seed companies, but from growers, and there is a big trade this way.

Mr. Madison goes to Stockton in the evenings only to get trade, as there is too much work in the daytime, and he has a big trade there. Furthermore, plants can be shipped to the city in the evening by water and arrive fresh and bright in the morning.

The leading plants raised for sale are tomatoes. There are also raised in quantities sweet potatoes, peppers (of the two types), cabbage, kale, egg plants, cauliflower, celery, lettuce and pansies. Of the latter 25,000 were shipped to Stockton this spring, each with a single blossom on. Besides these soft plants that take up little space, there are grown in the open strawberry plants, asparagus and rhubarb roots, gooseberry and currant slips, eucalyptus, acacia, fig and numerous other useful or ornamental plants and trees that there is a big demand for, which anybody might grow for himself.

Methods.—Leaving out the greenhouse work and considering the tomatoes, sweet potatoes and similar plants, the hotbed and the cold frame are the two fundamental parts. The hotbed frames are built entirely above the ground, so that stooping is largely unnecessary. These are about 20 feet long and three or four feet wide, somewhat higher on the north than on the south side, so as to catch all possible winter sun.

They are covered with thick drill cloth or with glass. The bottom foot is filled with fresh manure to supply heat in rotting, and a layer of sand and rich loam put on top. After a while steam heat from pipes will be used instead of manure, as it will save lots of work, but every farmer can get fresh manure and no one but a professional will have hot pipes.

For the following season the manure and soil has to be removed, as there is no heat in rotted manure, but it is awfully rich, as it has lost no fertility and has rotted in ideal fashion under hotbed conditions. Thus far this has been used to enrich the open ground where strawberries, rhubarb, asparagus and trees are grown.

As a hint for anybody with a garden and waste plants, the compost heap is a wonder. The soil, which happened to be in process of sifting, looked as if it was half loam and half manure, almost a leaf mould. It was only waste tomato and other plants, including weeds, thrown in a pile to rot and covered with damp soil. That is better than a bonfire.

When the plants are large enough to transplant they are put into boxes about three inches deep and the boxes set in a cold frame to harden up to weather and to get rooted. The cold frame is just a wide flat frame a little higher in the middle than sides to give slope to the cloth covering which protects it from frost. The cloth is rolled up to let the sun get in during the day and put down at night to keep out frost. No artificial heat is applied. Occasionally, however, two layers of cloth are required to protect against the cold, as was needed this last winter.

The transplanting to boxes, by the way, is the only work that Mr. Madison does not do himself. He has to work all the year round, too, for when the soft plants produced in the cold frame are gone, there is a lot of cleaning up to do, and tree seeds to plant and the other plants to look after. Likewise, he has been adding always to the equipment and built himself a lath house and had built a greenhouse and other equipment.

Supplying the Epicure.—There is always money in supplying people with unnecessary luxuries, like cucumbers and tomatoes, in winter. Mr. Madison a year and a half ago made $75 from a greenhouse 20 by 40, growing cucumbers for fancy trade in winter. He would have made more but was too late in starting the plants. This year he had other uses for the greenhouse so did not raise any.

Cucumbers are worth next to nothing now, but when next December comes and they are totally out of season some people go crazy about them. They must be, or they would not pay what they do. He only planted the cucumber seeds in January and got fruit in March. A man going into the business, as a couple of greenhouse men do, could get the fancy prices all winter and into spring. Mr. Madison claims he could sell all he could raise in Stockton, Sacramento and other places north of and out of San Francisco, also cantaloupes in winter. The cucumbers told of were grown flat. Professional cucumber growers in greenhouses grow them on strings and thus get lots more from the same amount of surface.

Now this is only a hint to people who might either grow these things (other than winter cucumbers) on a small scale for their own use, or to people who can go in the business and win. The fact of success is in plain sight and can be verified by any prominent seed company in this part of the state. It is true that only a rare man can succeed in it, one who combines an instinctive love for plants and the knack of raising them, with the ability to sell them, but there are lots of opportunities running around loose in California, and this is only one of them.

AUTUMN MOISTURE FOR FRUIT TREES.

To the Editor: Mr. Moser of Cupertino points out an apparent inconsistency in a remark I made on the subject of orchard irrigation.

The season "fall" is hardly yet. There may be early or late autumns. In hot weather, toward the end of September, it can scarcely be said to be the fall. Trees are mostly dormant, it is true, but with the high temperatures that very dormant condition would make the application of water very hazardous.

Since I wrote on the subject I have been told of three prune orchards in bloom now, and a message was sent me from one of the owners asking what would be the result, and regretting that I had not written sooner.

If the weather should turn cold in October, I would then say it was the fall, and time to irrigate.

Mr. Moser evidently got the water where the trees needed it, and no doubt he did not allow the surface to become hard and baked. The principle is the same, however. I have seen a number of orchards in the condition I described, mud in some parts, a hard dry crust in others, and trees with leaves all yellow in July.

Some soils, with repeated surface irrigation, become almost impervious to water; it simply stands on the surface and evaporates. Adobe—and I have 30 acres of orchard in adobe—may be very different. The way it cracks open sometimes would surely permit of the water penetrating deeply.

I will hope some day to accept Mr. Mason's kind invitation. Leonard Coates.

Morganhill.

ALFALFA BUTTERFLY CONTROL.

Several weeks ago a news item appeared stating that a measure of success had been secured in Glenn county in controlling the alfalfa butterfly by insect parasites. In response to a request for more data on the subject, we wrote to Carl J. Ley, county horticultural commissioner, for particulars [illegible] getting rid of the alfalfa butterfly. He [illegible] to say

that we turned loose a lot of Pteromalus puparum. In addition to that, all growers cut and mowed their alfalfa from the fields as quickly as possible. In most cases this was done even before the alfalfa was ready to cut. A bacterial disease also came over the caterpillars, which killed them by the thousands. Keeping the field clean is a great item in controlling the above pest."

It thus appears that the important thing is still as previously recommended, and that the parasites have not yet been tried enough to prove their actual value.

The Northfield Apple.

[Written for the PACIFIC RURAL PRESS by ALBERT F. ETTER.]

The Northfield apple originated in Vermont, and in many respects resembles the Jonathan. The Jonathan is peculiarly adapted to many parts of this upper coast region, and the Northfield seems likely to become as popular.

The accompanying cut gives a good idea of the Northfield. It is of good form and its color is bright. The ground color is pink to light red and often nearly covered with bright red stripes. All told, it is one of our most showy early apples. In quality it is not only good, but in comparison with the Gravenstein, that splendid variety that is generally conceded to be the standard of excellence, it is superior in flavor and texture. In drawing this conclusion, I mean that a majority of tastes will prefer the Northfield to the Gravenstein. It is more sprightly in flavor, and the freshness and briskness of flavor hold up better when the fruit is picked. It is an ideal variety for the home orchard, and its commercial possibilities are remarkably good. Comparing it with the Gravenstein, it bears younger, blossoms later, is more resistant to frost, never sets in clusters, and never drops from the tree. The fruit matures evenly, so that the whole crop can be harvested at the same time. The fruit is of a fine size for table use and does not vary much. It does not bruise easily, and the bruises are not very noticeable on account of the color. It is fit to pick a week or ten days before the Gravenstein and will out-keep it and hold its quality better. It is not subject to the "Baldwin spot," and it appears to be immune to scab. It did not scab at Ettersburg this year, when about everything else scabbed. Indeed, it has been the most trying season we have had in fourteen years. This immunity to scab is a most valuable feature in all this upper coast region. The most serious obstacle we have to contend with in the Gravenstein is its proneness to develop the Baldwin spot after it is packed. I never saw a Northfield affected with Baldwin spot, and I believe they are one of the varieties that are immune to this insiduous and obscure disease.

I never saw a better baking apple than the Northfield, and for cooking and pies it is the equal of any. The boost I herein give this variety would lead the reader to believe that in the Northfield we have an ideal apple, and this is just exactly what I wish people to believe. I have had it under observation for the last eight years, and it is a regular and abundant bearer and never offered a disappointment. I recommend it to planters for this region, and I shall live up to my recommendations to others by planting it myself and by top-grafting a lot of trees to it. We have 40 trees of it now, and I wish we had 4,000. The delegates to the Three States Good Roads Rally in Eureka, August 20, were enthusiastic in their praise of the Northfield apples served at the banquet, while Mr. Wagner, of Chicago, who saw samples of it at Hunt, Hatch & Co., of San Francisco, said it had the Gravenstein skinned a mile.

COST OF DRYING PRUNES.

To the Editor: Answering the question from San Mateo as to cost of drying prunes, the following figures of the 1912 crop may be interesting:

Twenty-two and three-quarter tons dry, from about 900 trees, yielded at the rate of 2.4 green to 1 dry.

Cost of handling, from tree to bins, ready for sacking, including turning over in bins to insure uniform curing, $12.50 per ton. It cost 50 cents per ton for sacking and $1.25 for hauling to warehouse, 5 miles away.

We pay the best wages and have everything handy. Our fruit is all dried on trestles, so there are no dirty trays, and they can be easily handled in time of storms, and can be looked over for slabs, etc.

All trucks, tracks, houses, boiler setting, etc., are home-made, but cheap and effective.

W. J. HILL & SON.

Redding, Shasta county.

[This is right to the point and business-like. Let us have other reports. Never mind if some of them are higher: we would like to give our San Mateo correspondent a chance to dry out a little after being soaked so badly with a cost of $37 per ton, as stated in our issue of September 27. The Shasta crop was about four times as heavy as his, which, of course, had something to do with the cost of handling: but for all that, the cost was evidently fierce.—EDITOR.]

APPLES AND LEMONS IN SANTA CRUZ COUNTY.

To the Editor: A series of unforeseen circumstances have served to materially reduce the usual large apple yield of Santa Cruz county this fall. There was during the winter and spring a rainfall far below the normal, following a shortened supply during the previous season; then, in April there were unlooked for frosts that shortened the promising crop, followed later in the season by excessive warm weather that had the effect to further deplete the fruit crop. But for all this the annual apple festival in Watsonville, the metropolis of the far famed Pajaro valley, has been a noted affair, attended by fruit growers from all parts of this state.

The widespread reputation of Pajaro valley apples has been justly achieved, made possible by reason of her fertile soil and climate adapted to the successful growth of this fruit. The average rainfall is twenty-eight inches, the average temperature sixty-three degrees, and the apple yield of the valley on a usual year is reckoned at five thousand carloads, portions of which find their way to England, Germany, France, Japan and other foreign countries.

This valley rivals, during blossom time, the far famed Santa Clara valley when the latter is enshrouded by millions of prune blossoms. The snowy blanket of apple and cherry blossoms covering the former named valley each spring time is of such pure white color and of so vast dimensions that the entranced beholder never forgets the enchanting sight. The leading varieties of apples cultivated are the ever popular Bellefleur and the Newtown Pippin, supplemented in good measure by the Red Winter Pearmain, though apples of high color seem not to be as popular as others. Yet it is to be noted that, by reason of an outside demand for apples of red color, an enlarged acreage is being planted to the Missouri Pippin and Smith Cider.

We have found the Bismark apple to be one of the finest raised in this county and, while the area so far planted to this variety is smaller than is devoted to raising the other varieties named, we predict for it a grand future. Ripening here in September, it attains good size, has a very attractive color—a deep red, splashed with yellow or green—and possesses a flavor that commends itself especially to cooks who pride themselves upon making superior pies and apple sauce.

Lemons.—In a small way it has been fully demonstrated during the last year that this favored county has many localities finely adapted to successful lemon culture that has the prospect of developing into large proportions, commercially speaking. Unbelievable as this may seem to many of the residents of this state, our location being so far north as to forbid in the estimation of citrus fruit growers in general the idea of raising this fruit on a commercial scale, future years will apparently reverse the long-time entertained verdict.

A lemon exhibit in the city of Santa Cruz a few months ago had the effect of opening the eyes of our horticulturists to the possibilities of extensive successful cultivation of this fruit within our borders. The varieties so far given precedence are the Eureka and the Lisbon. For some time after trees that will be set our next winter and spring have commenced to yield golden fruit it will not be possible to supply the local demand. So large will be the area planted to this fruit in this and other counties in the state that very early in the planting season there bids fair to be a dearth of nursery stock. R.

Santa Cruz.

STUCK WINES.

[By Prof. F. T. BIOLETTI.]

If you ask an expert for the best cure for "stuck" wines, he will probably say "not to have them." With a fairly well arranged winery and a skillful use of sulphurous acid, pure yeast, and cooling devices there should be no stuck wines. It is all very easy on paper.

But some wineries are not well arranged and there is usually a lack of cooling facilities. In such cases, if the weather is unusually hot, the must unusually sweet and two loads of grapes arrive when only one was expected, the wine will stick. In such cases, what can be done to remedy the defect, to get rid of the sugar and to make the wine dry?

Causes of "Sticking."—A stuck wine is one in which the fermentation has progressed to a certain point and then stopped before the wine has become dry, leaving a remnant of unfermented sugar varying from 1 or 2% to 5 or 6%.

There are three main causes for this stopping of the fermentation. First: Too much sugar in the grapes. Must showing 26 degrees Balling would yield a wine of over 15% of alcohol if all the sugar fermented. It is only under the most favorable conditions that yeast will produce this amount. If the must exceeds 26 degrees Balling, the fermentation cannot be complete. Second: Too high a temperature. Above 95 degrees F., the yeast is weakened somewhat, above 100 degrees F., seriously. Only by keeping the temperature below 90 degrees F. can we quickly get rid of the higher percentages of sugar. Third: The must may contain substances which weaken the fermentation power of the yeast. These substances may be produced by molds on the grapes, by wild yeasts at the beginning of fermentation or by bacteria toward the end. These substances are principally acetic and other volatile acids.

Cure of Stuck Wines.—When a wine has stuck, the sooner it is attended to the more easily it can be cured. The sticking is recognized by carefully watching the changes in the sugar per cent. If the sugar ceases to decrease and shows little or no change for twelve hours or more, the fermentation has stuck.

The wine should then be drawn off and pressed immediately and refermented as soon as possible. A delay of several weeks or even several days may be fatal. During such delay, the bacterial action goes on and the volatile acid may rise so high that the fermentation becomes impossible.

Refermentation is accomplished by introducing into the wine a large quantity of fresh vigorous yeast. This yeast is obtained as follows: Some fresh must of low sugar contents (not over 22 degrees Balling) should be placed in an open vat and fermentation started with some buckets of yeast from a strongly fermenting vat (pure yeast is better). The quantity of must should be about 10 to 20% of the quantity of wine to be refermented. When this must is in full fermentation, that is, when the sugar per cent has fallen to about 10 or 12 degrees Balling, the stuck wine should be run in and the whole pumped over and thoroughly aerated. Pumping over and aeration should be practised at least once a day and in three or four days the wine should be dry.

The practice of pumping stuck wine onto fresh grapes is a bad one. The stuck wine contains only debilitated and useless yeast and the volatile acids in this stuck wine prevent the multiplication of new yeast in the fresh grapes. The stuck wine and the fresh grapes should not be mixed until the latter has produced a large quantity of fresh, vigorous yeast. This is facilitated by frequent aeration of the fermenting must both before and after adding the stuck wine.

University of California, Berkeley.

Beginning the Winter Garden.

To the Editor: Lime, as I understand it, does not fertilize the soil, but does sweeten it and also tends to break up heavy types of soil. My place at Melrose is so filled with plants that it would be impossible to spade it under until the ground has been made sufficiently soft by the early rains, which I suppose would be the proper course for me to pursue.

I frequently read articles about the planting of winter vegetables; could you advise me what to do in this case, as at this time of year my soil could only be broken up with a pick; also what would be the best varieties to plant?

Is there anything I could raise for winter greens for the chickens?

I had a fine lawn until the end of June, but since then it seems to have dried out in patches and still looks miserable in spite of watering and manuring. Do you think it would prove beneficial to fill in with White Dutch Clover; if so, what would be the proper month to plant it? Should the ground be tamped before and after seeding, or should it only be raked in? Please excuse so many questions, but one gets bewildered by neighborhood wiseacres, so I am forced to apply for information at the fountainhead.—L. A. B., Oakland.

ANSWERING SUGGESTIONS.

You can apply lime sparingly between the plants and dig it in after the rain moistens the ground. Or if you do not like the looks of dry lime, nor the taste of it which you are likely to get, apply after the rains begin and dig in at once.

To plant vegetables before the rains begin, you must soak the soil with a hose or by running water in small ditches and then dig and plant after the land is deeply moistened. The alternative is to wait for the rains and then go to it as fast as the land gets into good condition. There is no use trying to handle the soil with a pick; either wet it down yourself or wait for the rains. You can plant in the fall everything except very tender things like corn, tomatoes, melons, eggplants, etc. Get the catalogue of a good California seedsman and it will tell you when to plant things. A good California seedsman is one who advertises in California agricultural papers.

You can grow cabbages, beets, lettuce and other hardy things now for winter feeding to poultry.

Your lawn soil may have spots with too much salt or lime from building refuse, or alkali, which has become concentrated at the surface by evaporation, or the spots may be too sandy to hold enough moisture to keep the grass alive. In the winter when moisture is ample, the whole surface may have a fair look and go bad in spots as soon as moisture becomes shy. If the soil is too light, tamping may help it; if it is too heavy, tamping will make it worse. There is no use raking in more seed without curing the trouble in these spots, except that it will help to make the lawn look better during the coming winter.

COLD-STORAGE LADYBIRDS.

The International Refrigeration Congress in Chicago last week called upon California to illustrate the uses of refrigeration in the suspension of ladybird life over a period of five months. E. J. Vosel, superintendent of the State Insectary, shipped two crates of ladybirds to the Chicago gathering, exhibited in a refrigerator with a glass front.

Early in February the ladybirds are gathered in large quantities in the Sierra Nevada mountains and shipped to this city. Here the insects are separated into crates, each containing approximately 30,000, and placed in a room the temperature of which is kept as close to 35 degrees Fahrenheit as possible. Beginning April 1, the insects are removed from refrigeration in such quantities as are needed until June 1. After being kept on the ice for about five months the insects die unless removed. This year the State had on hand about 500,000.

The shipment sent East was a collection gathered in July, but the general nature of the refrigeration plan of the State Insectary was well exemplified.

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LIME, GYPSUM, AND GRAPE PRUNING.

To the Editor: My garden is located in the foothills near Los Angeles. The soil for a depth of three or four feet is a heavy, black adobe, varying somewhat in heaviness. This year my crops were more or less of a failure. Is it characteristic of such soils to be deficient in humus? Or must I look further for the cause of my trouble? I intend to apply a good coat of manure to the land this fall. Is horse manure the equal of cow manure? How much air-slaked lime should be applied per 100 square feet? Is gypsum as desirable as lime for rendering the soil friable? What other effect will be produced by the use of gypsum.

Last summer a Thompson Seedless vine was accidentally injured and bled severely. This year it has been very weak. Will it make a sturdy growth next year or should it be replaced? I plan to grow my garden grapes on a trellis 7 feet high. Last year (the first summer planted) I cut back to two buds. My idea was to cut back to about 4 feet from the root this fall, leaving only two or three main branches. Is that proper?—J. A. P., Los Angeles.

[Probably your failure was due to heavy soil which could not be adequately cultivated and therefore was too slow to take water and too quick to lose it. It may be short of humus and either horse or cow manure will be good for it. The latter may be as good as the former for plant food—that depends upon how well each kind of animal is fed. Cow manure is less likely to ferment rapidly and produce too much heat, and for that reason horse manure is specially good for use in hotbeds.

You can use 5 pounds of lime to the 100 square feet. Lime is more energetic than gypsum in promoting friability. Gypsum is a safer plant stimulant than caustic lime. Neither is good for the soil unless its condition needs medicine—except in rare cases when lime is deficient.

You can grow your grapes as you propose. Cut back the injured vine to two buds again and let the others have more cane.—EDITOR.]

PORTABLE GRAFTING-WAX HEATER.

To the Editor: I have a wax pot that I like better than any other I have seen or heard of. It is made this way: Take a 5-gallon oil-can, cut out top, and put in a wire handle, say 2½ inches down from top; long enough to allow it to hang on outside of can. Get a lamp with short tin chimney in the bottom of can. Make a number of holes near one corner near the top and bottom so as to furnish air for light. Take two boards sawed so one will go in the top of the can and one will set over the top. Saw out a hole in the two boards so they will fit a basin. Cross the grains of the boards and the wax pot is ready to use. E. R.

Brownsville, Oregon.

ORANGES AND OLIVES AT OROVILLE.

By a unanimous vote the Oroville Chamber of Commerce has decided to give the annual orange and olive exposition again this year. The date has not yet been definitely set, but it will probably be during the first week of December. They intend to begin the arrangements early and plan to have the exposition bigger and better than ever before.

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[Written for the PACIFIC RURAL PRESS by C. A. BODWELL, JR.]

(Concluded from page 325 of last issue.)

SELECTION OF TYPE.—It was found that a pump of another frequently used type for such situations, to handle the same variable quantity of water through the same variable head, would have been one with a discharge pipe somewhere from thirty to thirty-six inches in diameter; this to get the best efficiency for the type, at the necessarily low speed at which it would have to run. It would not have handled the small quantities at all. The weight of such a pump figured approximately what the apparatus (illustrated last week) weighs, even if allowing it to become saturated to as great density as the weight of water itself, which is not at all probable.

The weight of the power plant would have been more or less the same for either type. Therefore the foundations would have been the same on either assumption, with the probability of extra precaution in regard to rigidity for the other more rapidly moving machine. The original cost figured much cheaper for the above design.

Thus the reasons for its selection were cheaper first costs as well as cheaper operating costs and the best efficiency, or the most altogether for the least money by about one-half.

This is the reverse of usual conditions, for it is generally found that if both operating and depreciation costs are to be reduced, that the first investment must be heavier. In other words, to secure the longest lived article, the best or highest priced one must be purchased.

WHEELS OPERATING.—There are several of these wheels in operation in different parts of the State. Though the object of this paper is to advocate their further use where conditions are adapted to and require them, yet with only two or three exceptions, in as far as the writer has knowledge, they are in bad repute. This is without just cause and they might well be in more frequent use. The main reason seems to be in their general improper design, or installation or both. Many wheels have evidently been built without designs, by handy men, who have neglected some of the very necessary details, or even constructed squarely at variance with well known and accepted engineering practice. For such handy fellows, the purchase of some stock pump and its power plant ready made would have been preferable.

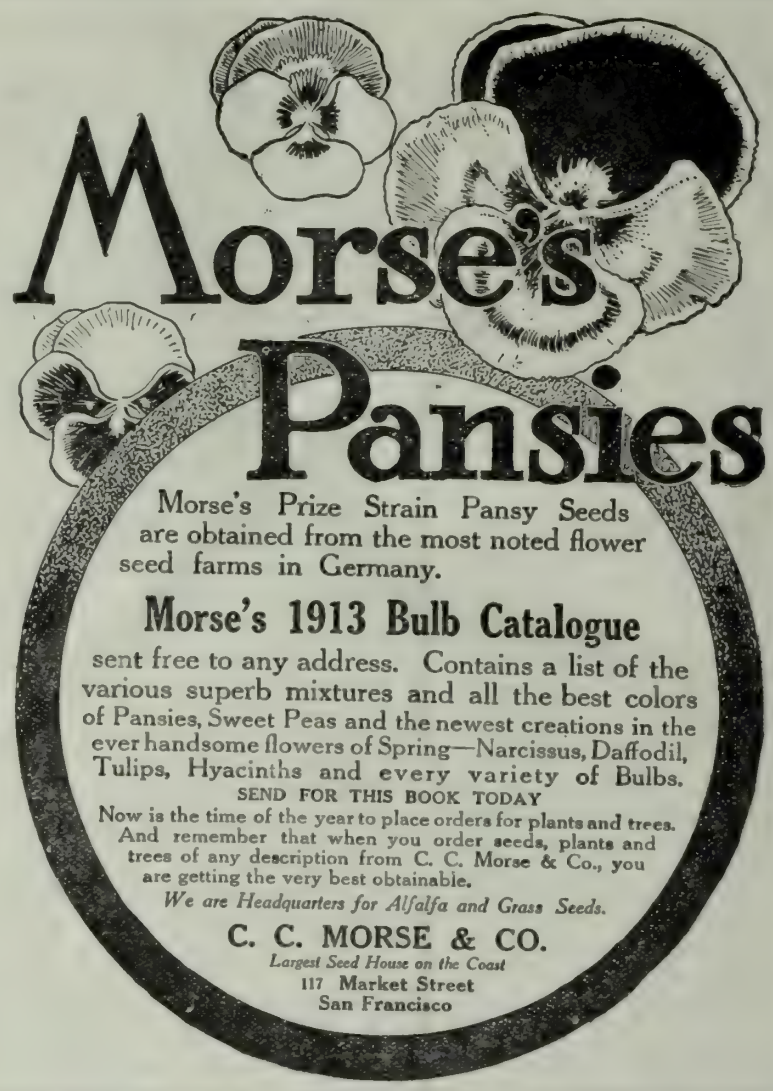
Doubtless they could have placed this on its foundation so that it would have at least operated somewhere near to whatever efficiency it may have been capable of.

An example of one successful wheel lift is, in brief, as follows: An owner who desired to drain a tract of land, and having seen the type of wheel in successful use in Europe, went to a friend who operates a machine shop and explained his needs. The machine man had never seen this type of water lift, so had never studied into and was not familiar with the details required for the successful operation of such a device. He was probably at the mental point where the Egyptian began who invented the apparatus four thousand years ago, in that he did not have any more exact knowledge of the things to be considered in its construction. However, of course, he had available the general mechanical knowledge as applied to mechanical things in our day. At all events, he evidently thought it so simple a matter that the result was a carelessly designed wheel.

Quite naturally he designed with the idea of using material from his own stock. He put in a train of gearing for which he had patterns, somewhat irrespective of whether they were just the thing or not, and supplied an engine of a manufacture which he sold on commission. The plant was erected and pumped water, but was so unsatisfactory and expensive to operate that the owner almost believed it was a mistake and time to install a so-called modern device. However, his ultimate belief in the type of elevator for the place and conditions, and which he had seen operating so successfully, led him back to a new start and this time to start at the beginning.

The work was put into the hands of an engineer to prepare designs adapted to the particular location, conditions, etc. The wheel was built. The water entrance and exit, the rake and dip of buckets, the gearing transmission, the relation of power to work, and in fact all things were fitted to the general design and every bolt went into its place as indicated on the blue print. It was designed properly and ran properly. Mr. Owner is naturally pleased and an advocate of the type for low-head work.

POWER.—It is not intended to discuss the merits of the different powers which may be applied to moving this wheel, as that is dipping into another subject. However, the use of the most economically operated power plant is, of course, as much contributory to the total efficiency as it would be if moving any other type of pump or machine, whether the apparatus moved was the most economical of its kind or not. As to the cheapest power, among those available, one has the choice in most locations of either steam power, gas engines or electric energy. Thus, in designing a plant for any particular lo-



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cality, the position on the map of that locality would be the principal factor to be taken into account, before deciding. For instance, if the location were distant from transportation facilities, where the total cost of oil or coal for steam fuel, or distillate for gas engines would be high, and, on the other hand, it was near some source of electric power, it may be easily demonstrated that the electric power would be cheapest, at any reasonable price per kilowatt. If, on the other hand, it were necessary for the consumer to build an electric transmission line some miles in length for the conveyance of his power only, and he were located near to cheap transportation, either steam or gas power might result the cheapest. Certainly one of these powers would be the safest in one particular, which is that in time of storms, which is also just the time a drainage pump would be most needed, high tension electric transmission is most likely to break down. Also if the pump were one operated only at rare intervals, it is possible that the electric power consumed might not amount to as much as the minimum for which electric companies insist that yearly contracts be signed for. If one has then his own self contained plant, while it may also be subject to breakdowns, they would be only local and generally more capable of being easily repaired by either the man in charge of the plant or some near-by machine shop. With such a self-contained plant, power expenses will amount only to the quantity of power used.

In original costs the steam plant will be the highest per horse power, the gas engine next and the electric motors probably the cheapest of the three, excluding the cost of the transmission line. However if electric motors are used, it is better to install well made heavy ones than the lighter cheaper types on which repairs are nearly always the greatest, if they happen to burn out.

CONCLUSIONS.—There is no intention herein to disparage other types of pumps, for there are other types most economically adapted to certain conditions and efficiently used in drainage work. However for extremely low heads, where the efficiency of the rapidly moving types run down so low and so fast, is where this apparatus, if properly constructed, will be found a money-saver.

The sketches in last week's RURAL PRESS show this particular wheel to be constructed of wood. It was intended for salt water. For many situations it might better be made of steel. This, of course, would change the design quite radically.

These wheels have been in use in Europe, particularly in Holland and England, during many years for land drainage. They are in use in the Mississippi valley for the same purpose, and many efficiency tests by engineers have gone on record, showing that for low heads, no other lifting appliance surpasses them in economy.

In comparing these wheels with some other type of pump, it must be borne in mind that to attempt to arrive at conclusions through general considerations only of the merits of rival propositions is time poorly spent, as results may not be measured by a common standard. Such comparisons and resulting deductions, if unfavorable to this wheel, may be assumed as having been put forward by someone with a desire to sell something, probably a ready-made appliance.

In designing a machine or selecting a machine to perform a certain piece of work, manifestly the desired requisite is to become possessed of an apparatus in which the first cost plus the operating and depreciation costs for a term of years will be the least for a certain amount of work performed throughout those years. The hope that some such good may result from the above, is the wish of the writer.

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A carefully compiled description of 90 of the most important varieties of dates in the United States has been included. This list embraces all the varieties the American grower is ever likely to have to deal with or to need information about. It is a valuable feature, and will be found of great service to those now engaged in date growing, or to those who contemplate engaging in this most promising field of industry.

The data contained in this volume is just what the rapidly increasing number of date growers have been asking for, but which, up to this time, they have been unable to secure.

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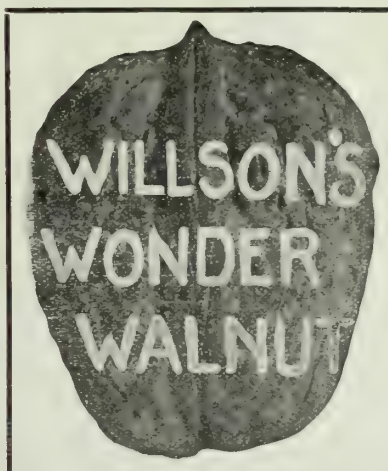

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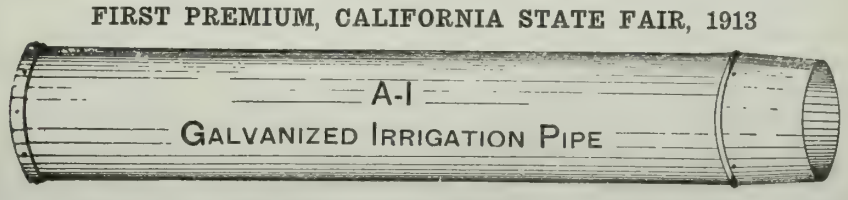

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AGRICULTURAL REVIEW.

With the Fruit Men.

It is claimed that prune prices have broken all records recently in Santa Clara county. It was thought two years ago that high water mark had been reached, but sales have bettered the best of those. Seven cents is reported to have been paid last week.

The prices of walnuts for the coming year have been announced by the Walnut Growers' Exchange as: Budded nuts, 19 cents a pound; No. 1, 16 cents a pound; and No. 2, 11½ cents. The price is higher than was expected a few weeks ago, owing to loss by sunburn, and is several cents higher than last year's prices. This loss will, however, be small financially, as the sunburned nuts will go out, but at a reduced figure.

The Santa Barbara Walnut Growers' Association is putting in a new system for bleaching walnuts at the Goleta warehouse. Salt is substituted for the lye solution.

Selma dried fruit growers are planning to organize a branch of the California Cured Fruit Association.

The quarantine on Missouri peach stock on account of yellow and peach rosette has been lifted, as it is claimed that Missouri is free from the diseases named.

The U. S. Department of Agriculture is to investigate the losses or gains in weight of dried fruit shipped across the continent through absorption of loss of moisture from the air. It is also investigating methods of packing and shipping dried fruits to have them carry in the best condition.

The olive picking season for the State has begun from Imperial county groves and soon will be in progress in all quarters. It is stated that prices for good pickling olives go from about $75 to $100, orchard run, with as high as $135 and $150 paid for fancy graded fruit.

The dried fruit packing house of I. H. Elliot in Selma recently burned and was a total loss, some $10,000 worth of fruit and raisins being destroyed.

The three acre prune orchard of J. De Woody, near Chico, yielded a crop this year that sold for $1680, or $560 per acre. The average returns for three years have been $500 an acre. Another 32 acres are not yet in bearing.

The apple crop from the Sebastopol district is moving rapidly at the rate of about four cars a day.

J. F. Stuart of Ripon, San Joaquin county, has developed a new variety of drying prune.

Shipments of fresh fruit this year were still greater than last year at the first of the week, but the lateness of the season last year made heavier late shipments than are going out this year, so that the total shipments at the close of the season will probably be less this year than last by a small margin.

J. K. Armsby & Co. have contracted for 200 tons of prunes in Capay valley and last week shipped them out.

Vineyard Notes.

September in the Fresno district proved to be one of the best drying months ever experienced, all but two days being bright. No measurable rain fell.

The Associated Raisin Company started seeding at the plant of the Pacific Coast Seeded Raisin Company and from now on work will go on to the capacity of about 300 tons per day. The company recently increased the price of loose two and three crown Muscatels.

There has been a little trouble from one or two growers whose raisins were under contract to the company delivering raisins to outside concerns under cover of darkness, though no suits have started. One grower who had his raisins under contract sold and delivered his raisins elsewhere, but escaped prosecution by squaring things. For the advantage of the industry violation of contracts arouses lots of indignation among growers.

The grape crushing season will soon be over in the interior. The price in the San Joaquin valley has averaged something over $10. per ton. Second crop Muscats have been bringing $12 and $13 per ton. Crushing has only recently begun in the north of bay counties.

Table grape prices have been reduced recently, but not as much as was expected. The season has been very profitable as far as prices were concerned.

Atwater shipped 40 cars of Malagas and 55 of wine grapes this year. About 40,000 cases of peaches were canned in the cannery, which is now run by the Sunlit Company.

Citrus News.

The date for the next National Orange Show at San Bernardino has been fixed for February 18 to 25. Harry Perkins will again be manager. The Orange and Olive Show at Oroville will be held earlier this year than usual, from November 25 to 30. E. B. Ward, secretary of the Chamber of Commerce, will be director general.

A. D. Shamel of the U. S. Department of Agriculture, who has done so much valuable work on the selection and productivity of orange varieties and other fruits, has left New York for Brazil, the home of the Washington Navel, to investigate orange varieties there. With him went L. G. Popanoe and P. H. Dorsett.

Capt. T. H. Thompson of the Thompson Orchard Co., Porterville, shipped 100 boxes of lemons by the first of October. This is a record for early lemons and is due to good care and a warm summer.

Twelve cars of oranges were shipped this week from the Merriman orchard, Exeter, Tulare county, to Australia. Owing to the law against shipping uncolored oranges to domestic markets, shipments for the East will not begin, according to Horticultural Commissioner Schulz, until early in November.

The Sunset Fruit Exchange of Santa Ana is to change its name to the Orange County Fruit Exchange, in order to show better the source of the fruit shipped.

Steps have been taken to form a Beaumont Fruit Growers' Association.

The State Commission of Horticulture has issued a bulletin on California Citrus Culture. The book is paper covered, contains over 100 pages and is well illustrated, taking up the main points of the subject. The commissioner, A. J. Cook, is the author.

The Bloomington Fruit Association is developing great facilities for frost control. The association tested out numerous orchard heaters, decided on the best and made arrangements with the patentees to manufacture its own heaters, thus saving a great deal in the cost. The association is also installing additional storage for oil in the erection of a 50,000 gallon tank. Individual growers are also erecting storage tanks and the district should nearly be frost proof by the middle of December.

Orange growers of the Fullerton-Placentia district in Orange county have probably received more for their fruit this year than if there had been no frost, for while the crop was reduced about a fourth the increased prices due to lessened supply more than made up for this difference.

Crop Report Trouble.

There has been a great deal of complaint over a recent crop report of the State Commissioner of Horticulture, it being unanimously agreed that the statement of yield as announced through the daily press was far above what it should be with many fruits, thus having a tendency to demoralize prices. The commission states that the published accounts were not official, but gathered by reporters from a casual examination of the estimates of county commissioners.

Fruit Growers' Convention.

It has been officially announced that the Fruit Growers' Convention of the summer of 1914 will be held at the University Farm, Davis, Yolo county. Yolo county fruit men and officials have been making special efforts to have this de-

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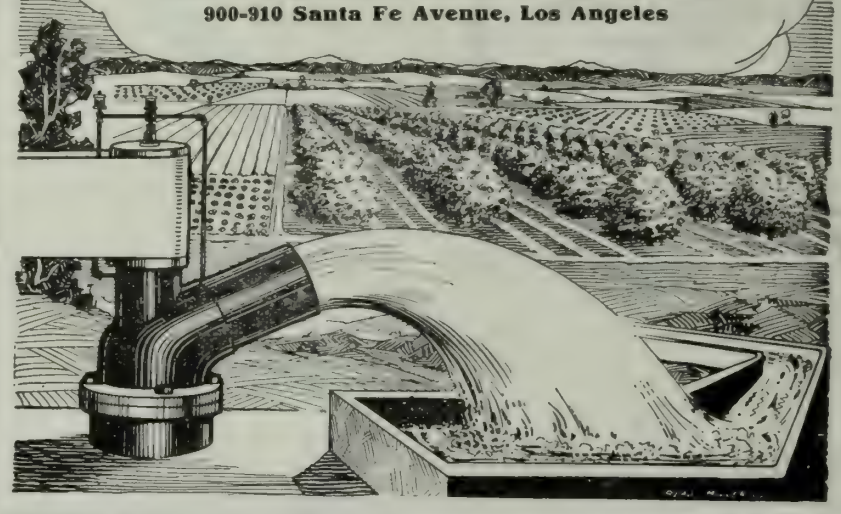

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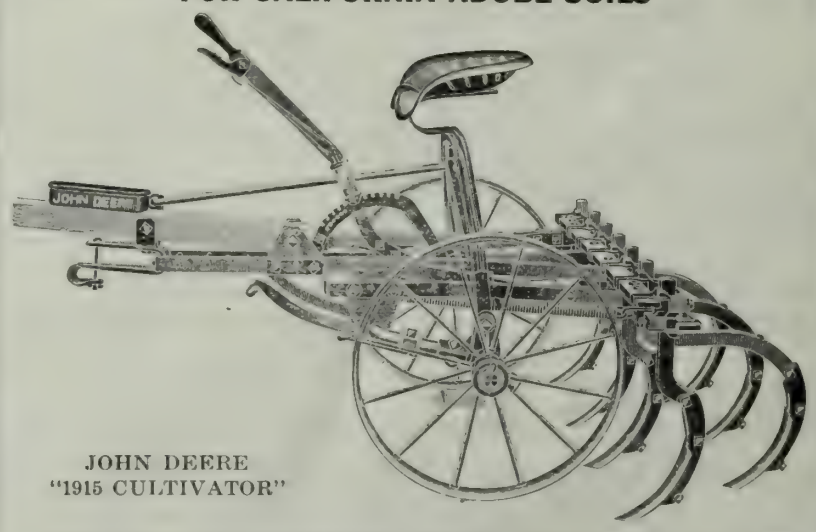

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cided, and are to co-operate with the University of California in making this convention the finest and best ever held. It will be a welcome to the fruit men by the University Farm, as well as by Yolo county, and will in this way be much more than a simple fruit growers' convention. Following the convention a series of meetings will be held for the County Horticultural Commissioners to obtain scientific information regarding their duties and to discuss pertinent subjects.

The convention to be held in San Jose during December will also be of great interest and value, judging from the tentative program recently announced. This is the first convention for a year, none being held during the summer.

Livestock Notes.

Arrangements are being completed for the conventions of the Creamery Operators and Dairymen's Associations in Tulare, November 6 to 9. Among the speakers will be H. E. Van Norman of the University Farm; F. W. Andreasen, secretary of the State Dairy Bureau; Hemler Rabild, of the U. S. Department of Agriculture; Prof. C. M. Haring, of the State University; and Dr. George Hart, of the Los Angeles Board of Health. Dairymen and creamerymen from all over California will be in attendance.

A visit of Dr. C. J. Bevan, of the Los Angeles Board of Health, and State Dairy Inspector J. S. Canham, through the Riverdale and Lemoore districts in Kings county, resulted in the conviction and fining of eight dairymen for running unsanitary dairies.

Accounts from the Imperial valley state that dairying has been more profitable than ever before and that the demand for good cows greatly exceeds the supply.

The dairy of John Lemos near Live Oak, Sutter count, has been sold to John Nola of Stockton for $22,500. The sale included 200 head of milch cows and dairy equipment, but no land.

George Farmer of Hanford has sold his herd of grade Guernseys to the Floribel Alfalfa Syndicate. The herd has been graded up to a high standard of excellence, and a number of fine heifers have been kept out to take their places.

T. H. Glide recently shipped a nice bunch of Short-horn bulls to the Hearst ranch in San Luis Obispo county.

There was shipped from San Francisco to Callao, Peru, recently six head of Holstein cows and one bull, 12 Poland-China sows and 2 boars, and 1 Berkshire boar and 1 sow, all California bred.

The California-Mexico Land & Cattle Co. the first of this month held a sale at which $50,000 worth of cattle were sold, all at good prices.

The movement of sheep from the bottom lands of the Sacramento valley to winter quarters has begun.

Tuolumne county cattlemen will hereafter make shipments of stock by rail from a point a few miles east of Sonora, where the Sierra railway has built corrals and other conveniences for that business. Heretofore the cattle have been driven to Oakdale, with considerable shrinkage and the price has not been very satisfactory either.

A few cattle in the Sonoma county mountains have been stolen this year by cattle thieves.

More loss from water hemlock poisoning than usual has been sustained on Napa county ranches this year.

Yolo county stockmen have started the proposition that a live stock commissioner would be just as fitting as a county horticultural commissioner. A meeting may be held to discuss the matter soon.

Miller & Lux are preparing to fatten 2000 head of beef cattle at the Alisal feeding station, Monterey county, during the coming season. The firm already has shipped in from Santa Barbara county 950 head, and more will arrive soon. Beet pulp and hay will be fed.

The Copenhagen cattle show has just closed. This is the largest dairy show in continental Europe and a large amount of American dairy equipment is always displayed.

The U. S. government is making plans for the utilization of Indian lands for stock raising purposes.

General Agriculture.

The U. S. Department of Agriculture gives the condition of the cotton crop of California as 100% on September 25, against 64.1% for the country, 68.6% being ten-year average for the latter.

Tobacco harvesting at Dinuba, Tulare county, has been in progress. The crop is larger than last year, but prices are not as good.

A possible potato record has been made on Roberts island, in the Delta country west of Stockton, W. R. Jacobs taking off 420 sacks of potatoes from an acre.

The sweet potato growers and shippers of Atwater have gotten together to establish a minimum price on sweet potatoes of $1 per hundred from October 6 to 15. A committee will meet in a few days to set another price to hold good from October 15 on for a couple of weks. This arrangement prevents price slashing.

Arrangements have been made so that cotton from that part of Mexico in Imperial valley can be shipped into the United States in spite of the quarantine on Mexican cotton on account of the boll weevil. There is no weevil in the Imperial valley, and if there were it would be over the line just the same as in Mexico.

J. Russel Walker harvested 4500 sacks of lima beans from 125 acres on the Cannon ranch near Ventura this season. The beans were grown without irrigation.

A large amount of alfalfa will be planted around Oakdale this season. Thalheim ranchers will also plant out about 1200 acres and Riverbank ranchers a lot more.

A. Moss of Lindsay planted blackeye beans in his 10-acre orange grove this year and took off, so it is said, about $400 worth of beans.

G. W. Overton, who farms north of Chico, has been developing new varieties of oats and barley with considerable success.

Saving the Date Palms.

One of the most important discoveries in the date industry is indicated in work done in the Coachella valley under the U. S. Department of Agriculture, by which it seems that there will be a great saving in the offshoots of fine varieties imported. The offshoots from standard varieties are generally vastly superior to seedlings and are highly valued, but heretofore about half have refused to grow after importation, being set out directly in orchard form. Under the new system the plants are set in a hotbed with bottom heat and by this method it is said that 95% live. The date industry promises great profits for Imperial and Coachella growers, and methods of saving offshoots will prove of great value.

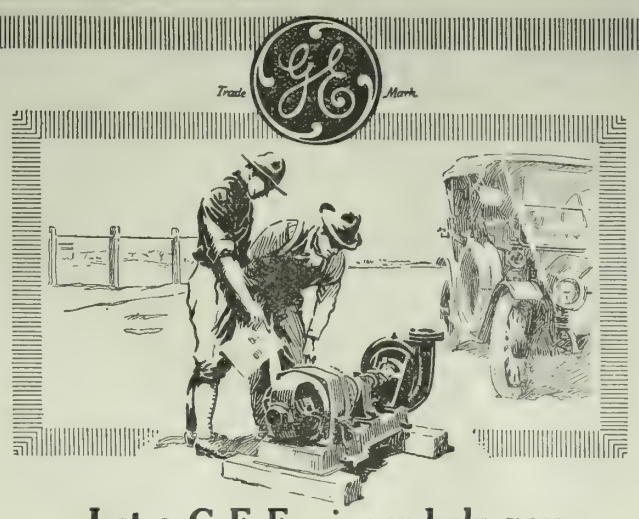
Miscellaneous.

The directors of the South San Joaquin Irrigation District are arranging about the head of water to be used when the district is in operation.

The survey of the San Joaquin river for irrigation purposes will begin about November 1.

William Swall and son have purchased nearly 1000 acres of the Baird ranch north of Tulare.

The Horan ranch north of Willows, containing 1930 acres, has been sold to San Jose men.



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B. T. Wilson is setting out 100,000 spineless cactus plants on his ranch near Riverside.

Owners of delta lands are proposing to secede from San Joaquin, Contra Costa and Solano counties and form a new county.

The State is finishing up its survey of the northern part of the Oakdale Irrigation District.

Irrigation by pumping in Tulare county has left dairymen much better supplied with alfalfa hay than was expected earlier in the season.

The R. C. Sargent Canal Ranch of 3400 acres of reclaimed land northwest of Lodi has been sold to Henry Riley of Napa for over $300,000.

A vote will soon be taken on the enlargement of the Orland Irrigation project.

San Fernando growers have petitioned for the formation of a big irrigation district.

By reason of careful grading and candling, the Tulare Co-operative Poultry Association is getting more than the Los Angeles quotation for its eggs. This is very unusual, especially from a district not especially considered a poultry center, and is a strong argument for care in marketing eggs.

Irrigation from the sewage of the city of Fresno has proved very profitable. The city has, or had, 2400 tons of alfalfa hay to sell from the sewage farm a week or so ago. About 100 acres more will be planted to alfalfa in the spring.

The Staniford Warehouse Company has been formed by a number of farmers along the Southern & Tidewater railroad a few miles north of Modesto.

SANITARY FERTILIZER

The only fertilizer made that is free of fats and oils, and is odorless.
25% cheaper.
Send for pamphlet and analysis.

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Stump Pullers

California Stump Puller Company

704 Bryant St., San Francisco

A. W. Mosher of Sherman Island cut 1500 acres of barley this year with a C. L. Best tractor and had only $3.60 to pay for repair charges.

The hop crop of Sonoma county is stated to be 32,000 bales, or nearly one-third the crop of the State.

An exhibition of California products has been made at the Ghent, Belgium, international exposition by Stine & Kendrick and as a result two colonies of Belgians have been planned here.

The Senate has passed the House bill that is intended to do away with old time land rushes on the opening of new land. After this the President will be authorized to adopt the lottery method of disposing of government land.

From Grain to the Dairy.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

That some branch of the livestock industry is the proper phase of farming for the new settler with small capital to pursue seems to have been demonstrated at Patterson, Stanislaus county.

This district, which comprises 19,000 acres, was a dry-farmed grain ranch in 1911, at which time it was subdivided and sold in holdings averaging, we should say, about 40 acres to the farm. The water for irrigating is supplied from the San Joaquin river being lifted from the river into the irrigating ditches by electric pumps and is conceded to be one of the best in the State. The soil is a rich black adobe sediment, very deep and with good transportation facilities was thought to be ideal for any kind of farming that one cared to pursue.

Like most of our big land subdivision enterprises, the selling company planted a considerable acreage to fruit trees and alfalfa, to show the prospective settler the merits of the land. Both did well and it was only a comparatively short time until most of the land was sold and the new buyers began to develop their holdings.

Some of the land owned by these new buyers was planted to fruit, but evidently the majority of them did not feel that they could wait so long for the land to bring in an income, for the most of them went to checking and seeding alfalfa.

Being bounded on the east by the Modesto district and on the south by Newman, the two big dairy sections of Stanislaus county, no doubt aided the alfalfa development, which has proven a good thing in many ways, as now, after four years, one finds the majority of the farms carrying some dairy cows and producing good crops of alfalfa, which has brought high returns this year with the high hay prices.

It may safely be said that now, after four years, this large tract of dry land has been transformed into profitable small farms and that this has been accomplished almost entirely through the alfalfa and dairy end for the fruit which was planted at first, even though it made a very satisfactory growth, has not as yet started to produce.

There are many circumstances which lead one to believe that this district will be a big dairy country, and not only that, but what is still better, the start that has been made along dairy lines indicates that good dairying methods will be pursued.

For instance, most all of the stock purchased has been high-grade stuff and tuberculin tested, and the value of good bulls is generally recognized, which is a big step in the right direction, and lastly, on account of most of the product going to the city milk trade, sanitary buildings are very much in evidence.

A good instance.—Perhaps the best example of an up-to-date dairy in the district is on the ranch owned by Roman and Kisner. There are 53 acres in this place, all seeded to alfalfa, except some seven or eight acres which is now into corn and which will likely later be planted to corn to be fed as ensilage.

While considerable expense was gone to in erecting the buildings, it was considered the proper thing to do, as the aim is to supply guaranteed milk and therefore receive higher prices. The milking farm accommodates 24 head, having one string of 12 stanchions on each side. Ventilation is provided for with windows on each side and a large door at either end. Cement floors, gutters and mangers were laid and steel stanchions set. By having short strings the gutters slope to one end, where they drain off into a septic tank, and from that the liquid manure runs into a cesspool.

Contrary to most dairies, no hay is fed in this barn, but instead the cows are fed in a lean-to shed on either side of the hay barn. This barn holds 75 tons of loose hay and the feed racks are filled right from the mow, so that very little labor is necessary. Later on, we were told that all of the hay would be chopped before storing in the mow. As the prevailing winds are from the north, the hay barn and corrals were built on the south side of the milking barn, so that foul odors usually blow away from the milk house or barn.

The milk house, while not large, is a model of cleanliness, having two rooms, one for cooling and separating the milk and the other one for the washing of cans and buckets, the latter one also furnishing room for a steam boiler.

The milk is poured in from the outside, being strained through a cloth and afterward run over the water cooler, which cools the milk down to about 65 degrees. A cement floor, well drained, was laid, and with screened windows for ventilation, everything is favorable for a thoroughly sanitary milk house.

About 15 cows are being milked at present, but we were told that later on this would be added to considerably.

That selling sweet milk in this way is profitable for the new comer as well as the established dairyman, may be seen from the fact that 15 cows, some fresh and others nearly dry, brought in $215 during the month from August 15 to September 15.

When one sees what has been done on this and surrounding ranches in such a short time, it would seem that water and alfalfa are about the greatest assets the State has to offer the new settlers who are compelled to purchase property which will commence producing soon after moving onto it.

HOGS AS SCAVENGERS.

To the Editor: An article in the Country Gentleman's Magazine, relating an Eastern farmer's experience with hogs and alfalfa, contains the following paragraph: "The hogs are fed, in addition to pasturage, entirely on swill or garbage secured from a large hotel, which is brought to the farm daily. About two loads of manure are secured from the fire department house, and this is thrown into the hog yards. The swill wagon is driven along the yards while the *swill is shoveled over on to the pile of manure. They are fed in this way twice a day.*"

I have italicized the portion regarding which I desire the opinion of your journal. Can you explain this apparently amazing method of administering swill, and would you recommend such a manner of feeding hogs? That is, shoveling swill over a pile of manure, presumably horse manure, as it is stated that it is "procured from a fire department house." Whatever is meant by this strange process of feeding, the article contains another paragraph of such invaluable and often neglected advice as to necessity of abundance of pure water for hogs, that I quote it here in full:

"One point in the care of hogs, in which Mr. Stapleton is very particular, is to give them an abundance of pure water. It is surprising how much they will drink. One barrel is used for every two yards, and is filled daily, if needed, with water from a spring on the place. The hogs are watered twice daily, and given as much as they will drink. Some sows will drink five quarts, some twenty. Mr. S. pointed out one sow with a litter of ten pigs that drank forty quarts a day. A bunch of nine seven-months pigs drank eighty quarts a day in June."

But please say what you think of a hog diet of mingled swill and horse manure. Hogs and alfalfa are the finest and surest kind of farming in California, as well as in the East, and there should be no mistake as to feeding methods.

A. J. LLOYD.

1618 82nd Ave., Oakland.

[The plan of hog feeding is rational, though it may offend our sensibilities. But, remember this: it is only safe and rational because the material is fresh and no putrefactive fermentation started. The hotel waste is hauled daily and the stall waste of the fire-stable is also hauled daily. If it is not done in that way it becomes dangerous as well as offensive to our thoughts. The hog is an indispensable factor in the feeding of steers, and the value of the hog in saving grain voided by the steer often constitutes the profit in the operation. Those fire horses are heavily grain fed that they may have bottom for sudden strenuous exertion. The voidings are rich in undigested grain, which the hog makes use of. The scheme is right if the work is done right; otherwise it is dangerous and abominable.—EDITOR.]

THE PUREBRED SIRE ON RANGE LAND.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

A long standing prejudice has existed among sheep and cattle men against the so-called alfalfa ram and bull, as it is claimed, and no doubt justly, that an animal raised on alfalfa where he is given careful attention does not stand up to his work when turned loose on the rough range with the other cattle or sheep, as the case may be.

This has been the cause of considerable worry on the part of the breeder, as he is anxious for his stock to prove satisfactory, and it has also troubled the range man, as, while he saw the need of better stock, there was always a big risk that the higher priced animal would not adapt himself to the different conditions, and therefore not be a good breeder.

The objection has been such a big one that many breeders have abandoned the alfalfa idea entirely, preferring to raise their stock as nearly like range conditions as possible, but such locations are scarce, and the majority of our breeders compromise by trying to have part range and part alfalfa, claiming that in this way a better sized animal can be grown and that he is hardy enough for any work.

Having faced this problem, but still seeing the need of well-bred stock, one of the State's largest cattlemen has figured out a plan by which he is able to use well-bred sires even though they been raised on valley land.

His plan in purchasing bulls is to buy shortaged yearlings instead of buying older bulls. These young fellows are taken at once to his ranch and gradually worked into range conditions, and in this way when they are old enough for service they have become so well acclimated, so to speak, that they go out with the herd and take care of themselves. Another advantage in buying at that age is that other buyers do not generally purchase so soon, and a much better selection may be had to choose from. Another interesting feature of this man's method is that at the time of buying his males he makes it a rule to take about one-third more than would ordinarily be considered necessary, as, for instance, instead of buying 20 bulls for use on 500 cows, as is customary, he buys 27 instead.

When they are turned out for service the 20 head are turned loose the same as usual, while the other seven are kept at the ranch corrals. One of the duties of the range riders in going over the range is to see that the bulls are kept separated, instead of allowing several of them to bunch up with a few cows, as is often the case.

They are also required to report any bull which has been hurt or seems sick and replace him immediately with one from the surplus at the ranch. The sick or hurt one is brought back to the ranch and taken care of until he is in shape for service again.

By carrying out this method it has been found that a much larger percentage of the cows are bred every year and also that the percentage of loss among the bulls is very small. The above plan would no doubt be as valuable for the sheep man as the cattleman, and while a great many hold off from buying until a good season for feed is assured, it would seem advisable to purchase early and young and also to get a few more than is considered necessary, for the stockman who overlooks building up his herd with better sires has missed a big bet.

TESTING MORE GRADES IN STANISLAUS.

A number of dairymen around Newman, Stanislaus county, have entered into an agreement with A. J. Reguar of that place to have him test their cows regularly once a month. The plan is the same as that in operation by the different cow testing associations in other parts of the state, except that no organization is formed by the dairymen.

It is stated that over 1000 cows have been entered and paid for, the charge being one dollar a year per cow.

A previous attempt was made to establish a testing association in this district a few years ago and it is to be hoped that this one will be successful.

Profitable Cheese Production.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

According to statistics, the production of cheese is a long ways short of the consumption in this state, and it is perhaps due to the conditions under which cheese factories must operate to be profitable. In the past most of our cheese has been produced in Sonoma, Marin, Monterey and Santa Cruz counties, from farms which are dependent entirely upon winter rains, therefore the spring and early summer run is good, but as soon as the green feed and grain hay has been fed the cows are dried up, leaving several months of unprofitable time on the dairyman's hands. This condition alone would seem to discourage further development, but still another one is that to run a cheese factory profitably a large herd of cows must be maintained, usually from 100 to 300.

However, in the face of both obstacles, cheese-making dairies have been maintained and have also been profitable. The reason that more cheese has not been made in our alfalfa districts is mainly due to the fact that milk produced from alfalfa hay is one of the hardest kinds to make good cheese from, and the good cheese maker from the coast counties usually makes a failure on alfalfa milk.

The reason given by experienced makers for this condition is that the gas in alfalfa milk makes the cheese raise out of shape while the curing is being done, unless one uses a different method than that generally practiced, which is simply to cook the curd slower and longer than with grass milk, which takes the objectionable gas out.

With this obstacle out of the way cheese making has been found both practical and profitable in the alfalfa districts near Salinas, Monterey county, and also in places in the San Joaquin valley.

One of the largest in the latter named district, and perhaps as large as any in the state, when the yearly production is considered, is the factory located on Hubbard & Carmichael's dairy near Newman, Stanislaus county. This ranch, which contains 426 acres of alfalfa, supports an average of 300 dairy cows besides the dry stock, and the milk is all made into cheese and sold to a San Francisco firm for one-half cent per pound premium over the market, showing that alfalfa cheese may be made good by proper handling.

An accurate record of each cow's production, and also her test, is made out each week, so that only good cows are kept, and it might be interesting to state that the returns from 300 cows usually run between $850 and $900 a week. This is better than is usually made in the same district from herds where butter fat is sold, but we were shown why this is so.

Taking 100 pounds of milk with a test of 3.5 per cent fat, for example, it may seem that this would mean three and a half pounds of fat, which, when sold at 30 cents a pound, would bring $1.05 from the creamery. The same amount of milk when made into cheese will make at least 10½ pounds, and perhaps more, that will sell for 16 cents at this time of the year, and better at other times. The returns for the 100 pounds made into cheese would bring, at the above figure, 1.68, or 63 cents difference.

It is true that the cost of producing is more for cheese than for butter fat, but there is nowhere near the difference that the returns would warrant.

Whey, which is the by product of the cheese factory, is considered as valuable as skim milk for calf and hog feed, and while it has to be fed with considerable care, the ranch above mentioned turns out a fine lot of hogs, and the calves are kept in fine growing condition.

The outlook for cheese making in this state is about as promising as any other phase of the livestock industry we have, providing one can carry a large herd and can get a first class cheese maker, for the market is good and can be depended upon as fully as the butter market.

CONCRETE STABLE FLOORS.

To the Editor: Are concrete stable floors desirable?—City Farmer, S. F.

Concrete floors are satisfactorily used for horse stables, provided the floor is ribbed or otherwise roughened in a way to reduce the danger of slipping. Some stable men have stall floors made that way; some use a wooden grating over the concrete in places where the horses have to stand for any length of time. Some soften the standing by plenty of sawdust or straw bedding.

INCREASING THE MILK FLOW.

The profits derived from the continual use of pure-bred sires has often been pointed out through these columns, but the experience of John Grill, at Chico, has been so pronounced along that line that it should prove profitable to others.

The dairy on this ranch has been operated for a great many years, and is now one of the oldest in that district. The early history of this dairy is about the same as that of most of our pioneer dairies, a cow's value being placed more upon her beef qualities than her milking powers, and the consequence was that any old cow was good enough and very little culling was done.

About ten years ago, the need for better cows was felt, as land had increased in value and the scrub cow could no longer make herself profitable. At that time 36 cows were selected for the future herd which produced 900 pounds of milk per day, or 25 pounds per day per cow. Instead of being satisfied with this amount, which was very good for that time, it was decided to purchase a pure-bred bull for a further increase of production. A Holstein bull having good milk record back of him was secured and used as the herd bull. This breed was selected on account of the product being sold to city trade, and as the Holstein gave a larger flow of milk, the returns naturally would be larger.

About this time a stave silo was erected and more scientific feeding method were pursued. It was found that these two factors aided greatly in the milk production, and since that time more good bulls have been purchased as they were needed, and two more silos have been erected.

Culling has been done during all of these years, and the result is that at present the herd of 23 cows are producing 960 pounds of milk per day, or 42 pounds per cow.

It is interesting to note the difference of the present production from that of former years, which is 17 pounds daily per cow. Selling the whole milk at the average of 14 cents per gallon, this means a daily increase in returns of 30 cents per day per cow.

Undoubtedly, part of this increase is due to better feeding, but the fact is very apparent that the better bred stock has had a great deal to do with it.

Granting that 50 per cent is due to the use of better sires, it is very evident that the pure-bred bulls have more than paid for themselves; in fact, one year's extra production would pay for a good bull which could be used at least two years and perhaps longer.

The point brought out most forcibly is that the ordinary dairyman can be benefited in a large way by purchasing bulls with milk records back of them. J. C. L.

NEEDS OF THE STATE FAIR.

There seems to be one issue which exhibitors and the members of the State Agricultural Society are united upon, and that is more ground room and better buildings. From a livestock exhibitor's standpoint, the crowded condition is most provoking, as there are not enough stalls for everyone and as a consequence breeders this year were compelled to use the dairy barn which should ordinarily be used for the milking contest exclusively.

Even by crowding there is not enough room for the dairy stock to be placed together, and the visitor is compelled to seek out every conceivable corner of the grounds to be sure he has not missed anything.

The horse and mule men fared equally as badly, and it is safe to say that many visitors did not see all of the stock exhibits for the simple reason that they did not know where to find them. Everyone attending semed to be of the opinion that before the Fair can grow larger, more room must be afforded, as stockmen with thousands of dollars invested do not care to expose their stock and take the risks now necessary.

The pure-bred livestock industry has made larger gains than is evidently known of and the State Fair this year shows that the bond issue to be voted on in 1914 should receive the support of everyone interested in the future of our State Fair.

The stockmen are not alone in this respect, as could be seen by the tent annex to the manufacturing building, the crowded quarters called the Women's Building, and the so-called annex to the Agricultural Building now used for two years.

The State Fair is a great educational factor from an agricultural standpoint, and at the present time needs more room for future development. J. C. L.

KILLING SQUIRRELS.

During July, August, and September, the Biological Survey of the U. S. Department of Agriculture has had a force of 28 men, under the direction of Dr. Ned Dearborn, engaged in poisoning California ground squirrels on the Monterey, Santa Barbara, Kern, and Sequoia National Forests. The dry year has been particularly favorable to this work, and the squirrels have been almost completely exterminated over the entire range of Dr. Dearborn's operations. The work was ended September 30. The poison used in this work was prepared according to the following formula:

Strychnine (pulverized alkaloid), 3 ounces.
Starch, ½ pint.
Barley, 13 gallons.
Water, 3 pints.

The water is placed over a fire and heated to boiling; the starch is dissolved in a half-pint of cold water and added to the boiling water, which is stirred carefully to insure uniform consistence. When the starch has become clear, remove it from the fire and add the strychnine. Mix this poisoned paste with the barley until every kernel is coated.

This work of squirrel extermination was prompted by the fact that ground squirrels are supposed to be carriers of the bubonic plague flea, and Congress made a special appropriation this year to clean up some of the infested National Forest lands so that any work required by the State authorities on adjoining lands would not be lost.

In addition to its sanitary features, there is an economic side to the question which should not be overlooked and which is vitally important. The annual loss of range feed and grain crops from ground squirrels is enormous. Squirrels, where they are left unmolested, destroy at least ten per cent of the grass fed on the range, and on grain land they destroy a much larger percentage of the crop. Ranchmen are generally agreed that this is a very low estimate of the annual loss from these pests, and any work in eradication means a distinct benefit to the agricultural interests of the State; and ranchmen owning land contiguous to the National Forests have, as a rule, taken very kindly to the work of extermination and have been anxious to clear their own land of squirrels at the same time that the work was conducted on the National Forests.

LEAKING MILK.

To the Editor: I saw in your paper several months ago a remedy for leaky cow teats. I mislaid the paper and was unable to find it. Would be glad to know what to use, if you know.—J. C. K., Healdsburg.

There is no good remedy for leaky teats. The muscles are so weak that they cannot hold the milk in, and there is no way to strengthen them. The only thing to do is to use some artificial method for closing the opening. Rubber bands are not satisfactory, and are likely to be uncomfortable and have a bad effect. The method usually advised is the application of flexible collodion to the end of the teat after milking. This has to be removed when milking starts again. Its action is merely mechanical and it has no curative effect, a new application being required after every milking.

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A Remedy for the Increasing Cost of Meat.

To the Editor: I have read many times in your paper about the shrinking of the ranges, the rapidly dwindling number of beef cattle, and have personal and unhappy knowledge of the rising cost of round steak and beef for stew.

Yet all this seems to be to be unnecessary; there are millions of acres of land in the West covered with chaparral, cheap land, much of it close to a market, and all of it simply awaiting the man who brings into it a breed of ruminants that browse instead of graze.

I am, through your columns, offering to the cattle raiser a method of obtaining a browsing kine, and offering to the suffering American people relief from the fear of vegetarianism that now so ominously threatens them.

I am advising the cattleman to kill and sell his Hereford bulls and instead use giraffes. The giraffe is a browsing animal that delights to feed on the tender twigs of the highest shrubs and disdains to partake of the lowly grass. Breeding this long-necked spotted browser with our cows will produce a race of rubber-necked cows that instead of eating high-priced alfalfa will wax fat on the leaves and twigs of the dense foothill chaparral. Their progeny will feed the world with juicy steaks raised not on silage but shrubs. Their beautiful spotted hides will bring a high price in the fur market instead of being used for making into common leather. Their carcasses will be doubly valuable on account of the twelve-foot necks which will supply an enormous amount of chopped-up stuff for boaring-house beef stew and for making "ham-flavor" deviled ham.

And what a picturesque sight a stockyard will become, instead of being filled with bull-necked, square-built, bellowing steers, they will be occupied with beautiful, long-necked, brown-spotted, gazelle-eyed "Giraffords," for this is what I christen them, the name being a combination of giraffe and Hereford.

We will, of course, have to employ at our abattoirs nothing but a ruffianly lot of recently arrived Bulgarians or some other cruel and brutal immigrants, for none of us would ever have the heart to deprive such sleek and beautiful animals of their precious lives.

I am giving to the world this valuable idea without hopes of gain, but with the desire to have my name emblazoned in history along with the names of those illustrious men whose appellations were bestowed on me by my parents to distinguish me from the many Tommys and Williams of our country.

EDISON BURBANK JONES.

Oakland.

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MISCELLANEOUS.

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AN EFFECTIVE SQUIRREL POISONER.

What has been highly recommended by farmers around Manteca as the best squirrel eradicator ever devised has been designed by C. T. Wiggin, one of the directors of the South San Joaquin Irrigation District, and can be fixed up in short order by anyone who is troubled by these pests.

It is made by laying two old fence-posts, or similar pieces of timber, side by side, three or four inches apart, or at such a distance that a squirrel will have room to go between them and make himself comfortable. They are nailed to keep in position and a board fixed to lay over them and to be removed at will.

The poisoning, with wheat, barley or other poisoned grain, is done by preparing a wide hole bored down from the upper side of each post to within a couple inches from the bottom. Then from the bottom and inner side of the post another smaller hole is bored to meet it. This points slightly upward so that the poisoned grain will work out through it. The two together form kind of an "L."

The poisoned grain is put into the hole and the apparatus set near the holes of the squirrels. They go under and eat the grain, and as they eat it other grain works down. New supplies of grain can be put in as desired. The great advantage probably is that, being covered, it forms an attractive hiding place for the squirrels, who eat in peace in its shelter, and it has been found that it will clean out a colony quicker and better than poisoning in the open. Persons who try it, report that after filling up the squirrel holes they stay filled, all the occupants apparently being killed. This apparatus can be used where poultry or stock are kept, as the grain is covered and only squirrels can get it. When squirrels are all poisoned in one place, it can be moved to another.

PEACE IN THE FOREST RANGES

Uncle Sam's "keep off the grass" warning was violated only 144 times in the last fiscal year, even though the warning covered a territory of more than 138,000,000 acres of national forest. In announcing the record the forest service officials expressed their satisfaction at the showing, awarding much credit to the stock raisers in the neighborhood of the forests for their co-operation in enforcing the law.

Of the total number of cases of grazing trespass, 20 were dismissed for lack of evidence. A majority of others already have been prosecuted and fines and punishment inflicted. During the year more than 20,000,000 head of stock grazed under permits of the national reserve, and 32,000 permits were issued.

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FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

WANTED—Burbank standard cactus leaves; highest prices paid. Address Sempervirens Cactus Farm, Santa Rosa, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

LAND FOR SALE.

FOR SALE—60 acres near Newcastle, Cal.; 12 acres in trees and vines under ditch; 23 acres in Zante currants (my currants took first prize at Seattle Exposition); 7 acres hay land, and 8 acres timber. Good house, barn, chicken house, packing house, etc. Completely stocked with implements, wagons, etc., including a good team of horses and harness. For particulars, price, and terms, write S. Hossli, Newman, Cal.

LAND AND WATER—$100 per acre. Complete irrigation; Sacramento valley, level; 10 to 100-acre tracts; terms; direct from owners. WATT & CO., 621 Jay St., Sacramento, Cal.

FOR SALE—20 acres, Merced county, orange, fruit land, good soil. R. AXTELL, McCormick, Wash.

TREES AND NURSERY STOCK

I represent a tract of land now being divided. It is in Tulare county with foothill protection on three sides. The soil is choice, without trace of alkali. Water is obtained at 100 feet with a lift of 15 to 25 feet. Electric power is cheap. A new railroad is now building through the tract and a new town site will soon be dedicated. No portion of the tract will be more than three miles from railroad station and packing house. 20 acres of this land can be made to yield an income of $2000 to $4000 annually. 10 acres can make a good living for a family. The price averages about $150 to $160 an acre—some lots lower, a few lots higher. We ask cash payment of one-fourth the purchase price, then wait six years for the balance. Low interest. Send for our illustrated booklet with map. There are special reasons why you should buy in the next six weeks—ask me why. W. P. McKEE, 546 Title Insurance Bldg., Los Angeles.

BEFORE COMMENCING OUR REGULAR SEASON'S advertising campaign, we desire to call the attention of plant lovers, fruit growers and our thousands of customers to the fact that we not only have a magnificent and complete line of fruit and ornamental stocks, but in addition to this will have many novelties to offer which will be worthy of attention. We solicit inquiries NOW and are prepared to offer special inducements on many lines. Mail us a list of your probable wants NOW and permit us to figure with you. Our firm is backed with 30 years of an honorable, straightforward business career and we always have our customers' interests at heart. Our annual ILLUSTRATED PRICE CATALOGUE will be ready for distribution about November 15th. If you are interested let us hear from you. FANCHER CREEK NURSERIES, INC., Box 180, Fresno, California.

Fruit Trees, Berries and Small Fruits; acreage planting a specialty. Roses, Bulbs. Lists ready. H. A. HYDE, Watsonville Nurseryman.

MISCELLANEOUS

AUSTRALIA

SPECIAL LAND SEEKER'S EXCURSION NEXT NOVEMBER to Victoria, Australia. Early reservation of berths desired. Reduced steamship passages and free rail travel for inspection. GOVERNMENT OF VICTORIA WANTS SETTLERS and offers unusual opportunities. Lands suitable to all requirements, exceptional terms. Free particulars from F. T. A. FRICKE, Government Representative (from Victoria), Box W, 687 Market St., San Francisco.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin, it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco

A party with a good powerful power well boring or drilling rig can make big money by writing me. I want to go in partners with proper party and can secure 10 wells to bore at once. H. LICHTENSTEIN, 24 Montgomery St., San Francisco.

To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay Ct., San Francisco.

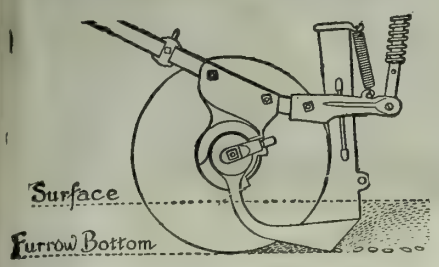
ALFALFA HAY—I have some No. 1 alfalfa, and it will pay you to write me for prices before buying. W. G. COPPERNOLL, Gridley, Cal., R. D. 1.

AIR-SLACKED LIME, FERTILIZERS. H. B. Matthews, 733 Merchants Exchange Bldg., San Francisco.

FOR SALE—Good registered Berkshire boar. Ayers Botts, Acampo, Cal.

PEORIA DRILL

Why You Should Buy the Drill With Disc Shoe Furrow Opener



Hundreds of **other** practical, progressive farmers have made big, extra cash profits by using the **only** drill with a furrow opener that sows every seed **evenly** at a **proper depth,** in a **packed furrow.** How about you? You **must** know the many advantages of making **every** seed count and of having a **uniform stand.** You **must** know that **any** furrow opener which combines every advantage of the **single disc** and the **shoe** is as near to **perfection** as any practical farmer could expect. We want to tell you **all** the facts, figures and proof of the **money-making** and **money-saving** advantages of the

PEORIA DRILL

The only one equipped with our famous Disc Shoe Furrow Opener. Read what one of the biggest grain raisers in the country writes: "We have given the drill you shipped a good trial and I think I can safely say it's the best drill made."—Wyman Land Co., Halsted, Minn.

Let us send booklet telling why it will **pay you** to discard all other makes for this Peoria, with its wonderful Disc Shoe Furrow Opener.

NEWELL MATHEWS CO.
Established 1886
Stockton **Los Angeles**

FOR THE "LAND'S SAKE"

BUY A

which has TELESCOPE enabling you to read the Target over 400 yards away, and

TERRACE, DITCH, TILE DRAIN, IRRIGATE

your land properly, and save surveyor's fees. It is sold by up-to-date hardware and general merchants everywhere, and guaranteed to be the most

SIMPLE, ACCURATE, DURABLE AND COMPLETE

outfit ever made for all farm work. If your dealer hasn't one in stock, he will order for you from a nearby hardware jobber.

Write today for description of Level, and details of our MONEY BACK GUARANTEE.

BOSTROM-BRADY MANUFACTURING CO.
94 Madison Ave., Atlanta, Ga.

EXCEPTIONAL OPPORTUNITY TO BUY A FOUNDATION HERD OF

Pure Bred Jersey Cattle and Berkshire Hogs

Owing to other business, I will sell at once my herd of 16 Jerseys, partly registered, including 18 month old bull Gerties Woodland Son 106120, sired by the famous bull Gerties Son, and whose dam was Lady's Setty Victor. Also my herd of Berkshires, including 3 boars, 3 brood sows due to farrow soon, and 2 gilts. This herd produced the boar, Brinton's Longfellow Junior, champion boar at Sacramento, 1912; also got first for best boar under two years at State Fair, 1913.

Do not miss this opportunity of buying your foundation herd at reasonable prices.

Call at my ranch near town or write.

A. H. BRINTON, WOODLAND, CAL.

MOTOR-TRUCKS FOR GRAIN HAULING.

In the literature of the motor-truck people we find this interesting account of grain-hauling with horse-less vehicles:

"Regarding the grain industry of California, there are a few of the ranchers in this line who are using motor trucks," says Ivan de Jongh, general manager of the Pioneer Motor Truck Corporation, the Pacific Coast representative of the General Motors Trucks. "With thousands of bags of grain to be hauled during the months of July and August—the hottest in the year—the necessity for this means of transportation is keenly felt, but due to the fact that there are ten more months to follow, when there is no grain to haul, it prevents grain ranchers from investing. This problem will have to be handled by the local transfer and drayage companies of the nearby towns, and it will be handled with the use of trailers, just as the present large spike teams are doing.

"The ensuing year, the Tulare lake lands yielded one of their biggest crops, and there were hundreds of thousands of sacks of grain to be hauled from 12 to 25 miles from these famous grain fields. The transportation was a difficult matter, and every horse in the section was put into the harness, and still the work was slow. One enterprising local man purchased a five-ton motor truck and made a detour of the Tulare fields, which gave him five miles greater running distance than the road used by the teams, but a better road, as it was not cut and chopped up by the horses' hoofs and the wagon tires. By using two and sometimes three trailers he would bring as high as 12 and 13 tons of grain on a trip, rarely exceeding a speed of four to five miles an hour.

"By arranging his trips cleverly, he was enabled to land his last load, which was always his biggest, about midnight, taking this load at a speed of three miles an hour. This grain would then be handed over to the warehouse the first thing upon opening, and he would start again, making two quick trips during the day with lighter loads, and one heavy trip at night. He has estimated to handle with his truck and trailer more grain than twelve four-horse teams could handle, and his gross earnings per day were well over $100. During the forty days' work, he estimated that he had cleared between $2500 and $3000 net."

WHY BEAT THE PANS?

Many beekeepers beat tin pans at swarming time because they think it makes the bees settle down, but a contributor to Bee Culture says that this practice is merely a relic of a forgotten English law which required the beekeepers to give notice in this way that his bees were swarming and that he was entitled to follow them. If he lost sight of them after giving this warning the bees became the property of the person on whose land they alighted.

You should have no room on the farm for a worthless dog which chases the dairy cows.

When the cows have only dry feed they need more water than when their ration is succulent.

Cheesecloth folded four times makes an excellent strainer.

Keep the pail clean and the calves won't stand much chance of having scours.

The really good dairy cow does not carry over much fat on her.

Why Experiment

WHEN YOU CAN BUY A SILO BUILT BY A CONCERN THAT KNOWS HOW.

The **IDEAL GREEN FEED SILO** has many practical patented features which are necessary to keep and preserve ensilage. A little investigation will convince you that it will pay to erect a silo.

The next question is "What silo?" You cannot afford to experiment.

You want a silo that by many years of use has proved its worth.

Profit by the experience of others who have built cheap home-made re-sawed silos in order to save a little expense in the start and later on replaced them with the Ideal Green Feed Silo.

Buy an **Ideal** now and save that last cutting of alfalfa which is generally lost on account of fall rains, etc., and at the same time preparing yourself against burnt out pastures the coming year.

The Ideal Green Feed Silo was awarded the Gold Medal at the California State Fair.

Write for catalog and full information.

Ensilage Cutters and Gasoline Engines

DE LAVAL DAIRY SUPPLY CO.

101 Drumm St. SAN FRANCISCO — **"Everything for the Dairy & Creamery"** — 1016 Western Ave. SEATTLE, WASH.

Salvador Stock Farm

Shire Horses

At the State Fair just closed, **every first prize** in the Shire classes was won by horses imported by the Salvador Stock Farm.

Stallions and mares for sale at reasonable prices.

HENRY WHEATLEY, Napa, Cal.

HOLSTEIN-FRIESIAN BULLS

BRED FOR YEARLY PRODUCTION

Riverside Sadie De Kol Burke

Two of our herd bulls are from 28,000-lb. dams with butter records of 1085 and 1142 lbs. We have fifty cows on yearly test. The first eight junior 2-year-old heifers to finish average 471 lbs. fat (588 lbs. butter, 80% basis). Ten cows have finished, including two 3-year-olds and three 4-year-olds, with an average over 700 lbs. fat (875 lbs. butter). Fifteen cows have averaged 651 lbs. fat (813 lbs. butter). Estimate the value of a bull in your herd backed by such production. Place your order now, as they are going fast. Write for information and prices.

A. W. MORRIS & SONS, Woodland, Cal.

Hopland Herd **Shorthorn Cattle**

FOR SALE

Eight Yearling Bulls, **Grandsons** of the famous sire **King Edward**—six dark red and two roan.

Also three registered yearling Holstein Bulls, exceptionally good values. Write for prices.

Hopland Stock Farm, Hopland, Cal.

1st Prize Ram Lamb, Omaha, 1911

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

Looking for More Beef.

According to reports, the shortage of beef cattle which is causing anxiety in a number of circles was indicated by the sentiment expressed at the national convention of American packers held in Chicago last week. In the words of Pres. Bischoff, as reported by the Orange Judd Farmer, it is the most important and timely problem now before the American people. In his opening address, which outlined the existing conditions, he declared that unless the situation changed in the next 10 years, porterhouse steak would be selling at $1 per pound and other cuts in proportion.

Recent tariff legislation tending to favor the admission of frozen beef from Argentina and Australia has a harmful effect, he believes, in that it tends to discourage American cattle raisers. He does not believe, however, that there will be much actual competition, because hotel and restaurant men have asserted that this frozen beef does not compare in quality and flavor with the native corn-fed product, and will always sell for a lower price for this reason. He recommended to the association that they make an immediate appropriation of not less than $100,000 per year for the next five years to inaugurate an educational campaign among the farmers and ranchmen in the United States in the interest of beef production.

More Beef from Farms.—A similar note was voiced in the address of John T. Russell, president of the Master Butchers' Association of America, who advocated that the government subsidize the raising of live stock where farmers do not have the means to begin. He mentioned a bill which will soon be introduced in congress to prevent the slaughter of calves and breeding sows and voiced the hope that farmers will of their own volition take up beef raising. "It is no more logical to mourn the disappearance of the range cattle industry," he said, "than to regret the disappearance of the buffalo." Cattle growing on the open range was a reckless system of gambling, but the new conditions, in which every farmer will have his own breeding herd, will insure stability. He mentioned the work being done on the Pacific coast where the big packers have organized loan companies to finance feeding operations, and suggested similar work to encourage cattle breeding.

Beef Will Never Be Cheap Again.—Domestic cattle production will supply the beef shortage in due time and the encroachments of Argentina and Australian beef will be a small item, is the belief of James E. Poole, who discussed the future meat supply. Meat will never be cheap again, he declared, and although theorists have cherished the illusion that an avalanche of beef and mutton awaits the free trade era, they will soon be discredited. Much saving will be effected in the future by eliminating the expense of hauling cattle around the country and saving the shrinkage brought about in that way. That means that they will be raised and matured near the same place. Big steers are out of date and the long yearlings weighing 800 to 1200 pounds will make up the bulk of future supplies. A number of interesting suggestions were made, some of which are more or less impracticable.

Public Abattoirs.—Bearing on this question of the future meat supply, Assistant Secretary Galloway of the Department of Agriculture, believes the solution lies in the establishment of municipal slaughter houses, according to recent questions in the public prints. He points out the difficulty the small farmer has in profitably marketing one or a small number of beeves, and thinks these should be established in many of the smaller cities. He contends that the farmer will produce cattle as soon as he finds it more profitable than field crops exclusively; not through charitable motives, but from business motives. "In the future we shall have to look to the small farmer—by him, I mean the farmer with average sized farms in the middle Atlantic States, New England, the South and the Middle West. There is abundant opportunity in these sections to increase the number of cattle raised annually and the department is ready to assist. With cattle tick eradicated in the South, I look for that part of the country to find cattle raising most profitable."

LOSSES FROM WRONG SPEED OF SEPARATOR.

The statement that lots of butter-fat is lost by running the separator at the wrong speed is so simple to make that most people overlook it and most papers seldom mention it for fear of covering the same ground too often. Judging from all accounts, however, the subject is blissfully ignored by too many dairymen, and lots of fat consequently goes out with the skim-milk. A statement of the matter taken from the Purdue Experiment Station after a large number of exhaustive tests will show the losses sustained. This report says:

"In these tests it was shown that incorrect separator speed will cost the dairyman who has 20 cows a large amount of money in a year. The average cow produces 3500 lbs. of milk, or 70,000 lbs. for the herd. Run through a separator correctly operated, the butter-fat would amount to 2954 lbs., or 3446 lbs. of butter, which at 30c a pound amounts to $1033.80. If the separator is operated at the lower 'guess' rate of speed as shown in the Purdue tests, only 1699 lbs. of butter would have been produced. At the same rate per pound, this would bring the dairyman only $509.70, or a loss in a single year of $524.10. This loss is sustained simply because of the need of a cream separator speed indicator—because the dairyman guesses at the speed of his separator."

That is a great big loss, and it is safe to guess that things are about the same here as there on some dairies. The directions with the separator tell the correct speed and how to figure it out. The figuring and keeping with directions give a very easy way to save a lot of money.

CERTIFIED MILK AS A WINNER

"Certified milk" is growing in favor, according to the department of agriculture, which announced today that the daily production of 126 dairies in the United States now is nearly 25,000 gallons, an increase of nearly three hundred per cent in five years. The department points out, however, that this amount is only about one-half of one per cent of the total milk supply of the country.

The department experts lay emphasis on the fact that expensive apparatus is not so necessary to the production of certified and absolutely clean milk as is a careful and unremitting attention to sanitary details.

In the bulletin which the department at Washington has just issued, the proper methods for turning out certified milk are set forth.

Sunshine, pure air, and clean stables are necessary for successfully managing a dairy.

The gasoline engine gives a more uniform and even power for the separator than can be provided by hand.

CHOICE CHEAP CONCENTRATED

MODESTO ALFALFA MEAL

FOR

CATTLE POULTRY SWINE

FOR PRICES SEE OR WRITE

THE GRANGE CO., Modesto, Cal.

A. C. RUBY, Portland, Ore. C. W. BOWERS, Sacramento.

Ruby & Bowers

The Largest Horse Importers on the Pacific Coast.

We sell more imported horses than all other firms on the Coast because we are direct importers and give a four-year guarantee which is good right at home. We have on hand at all times the largest and best lot of heavy draft stallions and mares, both American bred and imported, to be found any place in the West. If you are in the market for a high-class stallion or mare, don't fail to give us a call, as we can sell you more genuine horse for the money than any other importer in the business.

ADDRESS

RUBY & BOWERS, Davis, Cal.

We Have Imported More Horses Than Any Other Firm in the United States During the Last Year.

References: American Natl. Bank, Pendleton, Ore. Merchants Natl. Bank, Portland, Ore. First State Savings Bank, Marcellus, Mich. Bank of Yolo, Davis, Cal.

Hillcrest Stock Farm

THORNTON S. GLIDE, Prop.

DAVIS - - CALIFORNIA

"HILLCREST LAD"
First Prize Ram at State Fair, 1911

Breeder of

Short-Horn Cattle, Shropshire and Merino Sheep

Am sold out of yearling Shropshires, but can furnish fine Shropshire Ram Lambs sired by Rams imported from England.

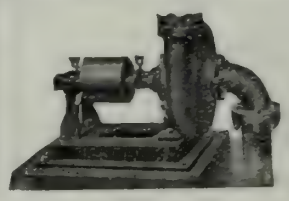
WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

THE EXCLUSIVE PIPE HOUSE.

PACIFIC PIPE CO.

Main and Howard Sts. San Francisco



PIONEER CENTRIFUGAL PUMPS

Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.

Our retail prices are less than our competitors' wholesale prices.

We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.

PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

Caustic Balsam

IT HAS NO EQUAL

For the Human Body —It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Exterior Cancers, Boils Wounds, Felons, Corns and Bunions CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Diphtheria, Sore Lungs, Rheumatism and all Stiff Joints

REMOVES THE SORENESS--STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

Calves Without Milk

Cost less than half as much as the milk raised calves. Increase your profits by using

Blatchford's Calf Meal

The perfect milk substitute—Best since 1800. Ask for free book, "How to Raise Calves without milk." Your name and address on a postal is enough.

COULSON CO.
Petaluma
Cal.

SHROPSHIRES

Pure Bred and Registered

140 Head Yearling Rams
150 Head Ram Lambs

Enterprise Stock Farm

H. P. EAKLE, Jr. Woodland, Cal

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

Save Money On What!

Second Hand Pipe

By buying at the

ALEXANDER PIPE CO., Inc.
256 North Point St., San Francisco, Cal.

Greatest Fair for Fresno.

[Written for the PACIFIC RURAL PRESS.]

Fresno county has long been famous for many things, including grapes, peaches, etc., but she has added a new conquest to her list this year by giving a county fair almost equal to the State Fair in many respects, and which far surpassed any county fair ever held in the State.

The many thousands of visitors in daily attendance agreed that there was ample entertainment provided for everyone from the throngs who go entirely for the amusement features to the people from the rural districts who care more for the educational features.

One of the striking features of this fair was the fine display of farm implements and equipment which was on exhibition, both by local concerns and those from a distance. Daily demonstrations were given by many of the pump companies, gasoline engine and tractor concerns, and two firms demonstrated the milking machine in actual operation. In this division nothing was lacking for one to get ample information along equipment lines, which made the fair well worth while to the farmer.

The Agricultural Hall at this fair is always attractive, being filled with booths representing the different towns adjacent to Fresno. Among those exhibiting were Sanger, Fowler, Kingsbury, Carruthers, Selma, and exhibits from Madera and Fresno counties.

The poultry show this year was an excellent one, in fact much better than has usually been shown at any of the fairs this year on account of the off-season for poultry. Doubtless more room will be needed for this department in the future, as the present quarters look to be pretty well filled up.

An interesting feature on exhibition this year was the total amount of alfalfa hay produced on one acre in one year. The exhibit was from Carruthers, Fresno county, and contains over 11½ tons, baled, or enough to feed two ordinary cows for a year. Such exhibits as this are educational in many ways, as they show what a great plant alfalfa is in this State if properly taken care of.

The livestock show was better in most respects than heretofore, and as there was a great deal more interest taken in the different divisions this year, the exhibitors should in the future receive better accommodations, especially as they are mostly from a distance and spend considerable money in making the trip.

The draft-horse classes were mostly filled with local or nearby horses, with the exception of a showing made by the California Polytechnical College in charge of Professor Rubel, who also showed some fine Jerseys.

T. S. Glide had a creditable showing of Short-horns entered, taking down all of the money with no competition.

The Cartwright herd of Red Polled cattle, as well as the Dutch Belted herd owned by U. G. Strader, were entered and won everything with no competition.

The N. H. Locke Co., of Lockeford, showed their prize-winning herd of Jerseys, with all awards and no competition, as did Minor & Thornton, of Kearney Park, with the Holsteins.

A new entry in the livestock classes this year was A. M. Humphrey's of Guernsey cattle, who also showed his prize-winning Berkshire hogs, with no competition in either division.

Other exhibitors of swine were Linquist Bros. of Turlock, who showed their Duroc-Jerseys, with no competition.

While the quality in all divisions was of a high standard, there should be more competition to make the stock show a more entertaining and educational feature.

The judges of livestock were Prof. Gordon True for dairy cattle, and Prof. J. I. Thompson for swine, both being from the University Farm at Davis. Professor Rubel, of San Luis Obispo, did the horse and mule judging.

The attendance for the week was much larger than ever before in the history of the Fair, and at the close the directors were promising great things for next year. J. C. L.

A BOVINE BANQUET.

A unique banquet, at which cows were present, not only as interested spectators but as guests of honor, was given last week at Monrovia. It was served in a large cowbarn to sixty society and club women. The diners were seated at long tables next to the stanchions. The festive board was decorated with wild flowers, which the cows were occasionally able to reach by a long stretch. The menu consisted principally of milk and cream, and the various products of milk—cheese, ice-cream, milk bread, peaches and cream and pastry in which butter and milk were the predominating ingredients.

Dr. B. C. Davies was toastmaster. The principal addresses were made by Mrs. Charles Farwell Edson, Dr. F. M. Pottenger and Mrs. Cora D. Lewis. Both women spoke of the need of sanitary dairies and told of the interest of Los Angeles clubwomen in obtaining pure milk.

Mrs. O. E. Masenheimer explained how she milked sixty-one cows with three machine units in less than one hour. The operator explained that it required three men three hours to milk the same sixty-one cows.

NATIONAL WORK AGAINST HOG CHOLERA.

Inauguration of a countrywide campaign to eliminate or control hog cholera is urged in a special report by Marion Dorset, of the Bureau of Animal Industry, who estimates that during the last year about $60,000,000 worth of hogs died of the disease.

After experimenting for more than 25 years, the Department of Agriculture finally discovered a serum that will prevent the disease and which now is being distributed in 30 States. This work, however, Mr. Dorset says, has not resulted in a diminution in the price as a whole.

In suggesting a national cholera campaign, the report urges that the serum be used as a basis. The success of the movement, it says, depends upon the establishment of efficient State and federal organizations which will work together, but which must enlist "the full co-operation and support of the farmers."

ONE REGISTERED

PERCHERON STALLION

•2 years old, color steel gray; will make 1800 to 2000-pound horse.

Also one Registered Percheron mare, 6 years old, color steel gray, for sale. Both fine individuals.

C. W. VAN GELDER
Acampo, Cal.

REGISTERED HOLSTEIN COWS AND HEIFERS FOR SALE.

Call and see them at Modesto (5½ miles northwest).

This is a choice lot, part A. R. O. cows.

M. HOLDRIDGE.

Dairymen and Fruitmen!

See FAIRMEAD Now

Unlimited water.
Rich, sandy loam soil.
Good neighbors.
Healthful climate.
Splendid markets.
Thousands of acres
now being improved.
19,000 acres now being
sub-divided into
10-20-40 acre tracts.
Low prices—Easy terms.
Send for booklet "R" today.

Co-Operative Land and Trust Co.
595 Market St., San Francisco.

ORO LOMA

$100 AN ACRE

If you are looking for 20, 40 or 60 acres of good land, we want you to see Oro Loma, with its great Egyptian corn crops, alfalfa, watermelons, millet and sorghum before the harvest. We want you to see our great well system irrigating daily and producing thousands of dollars while the canals are shut off for the summer. School now open for fall term. You deal direct with the owners. There is no better land at any price and you get all the water you need the year round, twelve irrigations a year if you want it. Six crops of alfalfa sre. Never again will you be offered the best land in the state for $100 an acre with water right and main ditches. Largest Burbank's spineless cactus plantation in the world on Oro Loma. In the heart of the great San Joaquin valley. Easy terms.

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FRESNO OFFICE—FORSYTHE BUILDING
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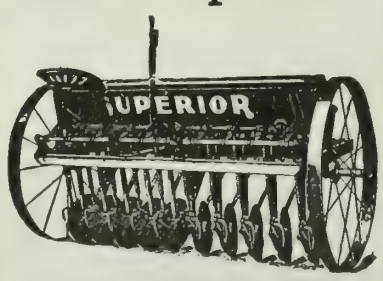

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PAPER

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Getting the Turkeys Ready for Early Market.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Time and tide wait for no man, and we have to keep our eyes and ears open or they slip by us without our knowing they are anywhere around. It only looks like the other day since we were fattening the turkeys for last Thanksgiving, and yet it will soon be around again. Anyway, it is just about time to be getting the flock sized up and finding out what condition they are in. From all indications the turkey crop of the State will be a good one; there have been very few complaints of sickness this year, or of loss at hatching time, and these are the things we have to go by in sizing up a crop. There has been an abundance of grasshoppers this year, and while that means more or less destruction to grain crops, it is good for ducks and turkeys; in fact, when the grasshopper crop is good, ducks and turkeys literally live in clover.

SORTING OUT.—Now to get the best prices for what we produce there must be a system in our marketing the produce. There is nothing sold on pure merit alone these days, no matter what it is, nor how good, if it is not marketed in an attractive form that appeals to the eye we never do get the top notch price for it. So the first thing to do in order to get the top price is to sort out our turkeys into sizes. The largest and most forward are to be gotten ready for Thanksgiving, not that prices are any better at that particular time, but because by selling a portion of the crop then it makes more room and feed for those that are left. I have many times noticed how fast the left-overs grow after the bullies of the flock are gone. Big turkeys and chickens are always bosses over the lesser ones, driving them from the feed and chasing them around the yards, so that what feed they get doesn't seem to do them a bit of good.

Another reason we should sell off the biggest turkeys at Thanksgiving is that after they attain a certain size or weight we keep them at a loss. It is always better to sell when a thing is ready for the market, even though we do not get quite as much as we might get later. So let them be sorted out and the largest put by themselves and run into a good big yard, if one can be had; if not, they should be fed separately until toward the latter end of this month, and then penned up.

Never try to pen turkeys up without first providing perches for them, and these should be placed as high as possible because the higher they are the better the turkeys will like them. Until they are penned up for the final finish, corn is as good a feed as can be fed, but after they are penned, some soft feed should be served. For this there is nothing better than a good kettle of small boiled potatoes; when cooked soft, add as much ground corn as potatoes and water will absorb, and mash all together with a home-made masher, adding a good handful of salt and using the masher until every bit is fine. When cold, this can be sliced, and if properly mixed will be well cooked all through.

If catering to fancy trade, such things as celery tops can be boiled in with the potatoes, or any desired flavor may be given the meat by feeding the right food, some even going so far as to mix wine in the mash feed to give the meat a liquor tang, a foolish thing to do, but some folks like such foolishness.

TURKEY CONDITIONS.—Just straight well fed turkey is good enough for most of us, and we ought to be thankful we live in a State where there is feed enough left to make them fat, for according to what those say who have been back East, we are far and away the most favored of all States in the Union. It does not require any argument to prove that any year—at least it does not to me. I was ten years getting here, but I am here to stay, and glad that I can stay. There are some few things that are good that come from other States in the Union, but we can fatten turkeys as well as most of them. After a few days of the boiled potatoes and ground corn, add a little tallow or any kind of wholesome grease to the mash and feed this mash twice a day, morning and noon and give corn at night. If corn is fed in the morning it takes so long to digest that the birds do not get hungry during the day, and of course, if not hungry, they are not making much flesh; so it is policy to feed mash in the daytime and corn at night when there are several hours for it to digest.

Plenty of fresh clean water and some shade are necessary adjuncts to the health and fattening capacity of the turkeys, so let that be looked after as regularly as the feeding, for all belong together.

LIVE OR DRESSED TURKEYS?—Whether to sell live or dressed often bothers a person, but as a rule it is best to be guided by the distance from market. San Francisco commission men rather prefer live turkeys from nearby towns, and dressed from long-distance points. I believe that they want to satisfy their patrons and are always ready to give advice in matters pertaining to their business. So when in doubt, it is always best to write to some commission man that advertises in the PRESS or other reputable farm paper. If you live at a distance and must sell dressed, then do the work in an up-to-date manner so that you can command the top prices. Turkeys must always be dry picked, so care must be taken to kill the birds right. By using a proper killing knife, it is possible to strike the brain and thus cause all the feathers to become loose. This means a whole lot to those who are doing the picking. The picking must be commenced at once, for the cooler the bird gets the tighter the feathers get and harder to pull. Don't singe them, or you may possibly blacken the flesh, which would spoil the sale.

COOLING.—After the feathers are all pulled, the fowls must be cooled before packing. If it is near night and they could be hung outdoors, so much the better, as then all heat would be out before packing. But if they have to be shipped very far to a market, one cannot afford to keep them over night and the cooling must be done with cold water. After they are taken out of the water, be very sure to wipe each one perfectly dry, even if it takes two cloths to do the work, for if any moisture be left on the meat and the shipment should be delayed on the way, every last one of your turkeys might be discarded. So you see it pays to be careful over the little things. Now having dried the turkeys, the packing comes next. Be sure that you do not draw the birds, and it is well to leave just a few feathers on the first wing joint. Have good clean boxes or barrels to ship in; if you use boxes, those that will hold two tiers are the best. Line the sides and bottom of the box with clean wrapping paper and lay the first tier of birds in rows on the back. The next tier should be placed in the opposite direction, so that whichever way the box is opened, bottom or top, the turkeys will be found back to the box. A clean layer of paper should cover the turks before nailing on the top boards. An attractive shipment gives a good impression and shows the merchant that you understand your business and will expect a good price for your goods; while an unattractive shipment leads them to think you are an old fossil that they send any old price to that happens to suit them. Mind, I don't say for certain that that is how you will be treated, but by sending goods to market in an old-style, unattractive manner you lay yourself open to such treatment unless you happen to strike a very honest man who buys on quality of goods and fails to notice the package—a thing rarely done in these days. Be sure to have the address in one or more places where it is plain to be seen, stating who the shipment is from and town and State. Also write a letter notifying the commission man that your shipment is on the way and will reach him at such a time.

Having attended to all these little yet important items, you can rest satisfied that you have done your part and will expect a fair price for your goods.

SHIPPING ALIVE.—If you live near a market that prefers live turkeys, it will pay you to make your own shipping crates and insist on the shipping men returning same; then you have them for another shipment. In making, provide for the comfort of the birds during the time they are on the road by making them high enough for them to stand up. Also allow room enough for the birds to stand without tramping on each other. Three-foot wire netting on a fairly stout frame gives height and allows plenty of fresh air; make the corners strong and put one stay of one by three in between each section. Give a feed just before starting, and put in a water-can, so that the express men can water if necessary; then there is no reason why they should not arrive in good condition.

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January 4, the University of California Agricultural Experiment Station will make an exhibit and will also conduct an information bureau for the benefit of those attending the show. This department of the University is working for the interests of the poultry industry in every way. There will be a fine exhibit of game birds, also a display of young and old ostriches, representing an important California industry. The forthcoming show will embrace not only poultry, but every kind of feathered stock. A convention of those interested in any kind of feathered stock will be held January 2 in Dreamland rink during the show. D. O. Lively, chief of the livestock department of the 1915 exposition, will be among those to address the assembly.

THE BEST MASH FORMULAS.

By request from RURAL PRESS readers, we give here six different formulas that can be used in preparing a mash for laying hens with excellent results. These formulas are found in the bulletin on poultry feeding by Prof. M. E. Jaffa, issued by the College of Agriculture, Berkeley. All of them have approximately the same composition and give equally good results, and a man simply has to find which one is the cheapest to prepare. The bulletin says: "They are calculated for 100 hens per day, and if fed with nine to twelve pounds of grain, according to weight of hens, and some green stuff, they will form a well balanced ration. Mash may be fed wet or dry."

The formulas, together with cost at present prices, figured wholesale, follow:

I.	Qts.	Lbs.	Cost.
Bran	6.0	3.0	3.75c
Shorts	2.5	1.8	2.34c
Cornmeal	1.5	2.3	4.60c
Cocoa O. C. meal	1.0	0.9	1.30c
Beef scrap	1.0	1.5	4.50c
Coarse bone meal	0.5	1.0	2.00c
			18.49c

II.	Qts.	Lbs.	Cost.
Bran	6.0	3.0	3.75c
Middlings	0.5	0.5	0.80c
Linseed O. C. meal	0.5	0.5	0.75c
Gluten feed	0.8	1.0	2.25c
Ground oats	1.0	0.75	1.12c
Cornmeal	1.5	2.25	4.50c
Beef scrap	1.0	1.50	4.50c
Coarse bone meal	0.5	1.8	2.00c
			19.67c

III.	Qts.	Lbs.	Cost.
Bran	5.0	2.5	3.18c
Shorts	3.0	2.0	2.60c
Cornmeal	1.5	2.25	4.50c
Soy bean meal	0.75	1.0	2.00c
Beef scrap	1.0	1.5	4.50c
Coarse bone meal	0.5	1.0	2.00c
			18.70c

IV.	Qts.	Lbs.	Cost.
Bran	6.0	3.0	3.75c
Cornmeal	1.0	1.5	3.00c
Barley meal	2.0	2.2	3.96c
Alfalfa meal	1.0	0.5	0.50c
Soy bean meal	1.0	1.3	2.60c
Beef scrap	1.0	1.5	4.50c
Coarse bone meal	0.5	1.0	2.00c
			20.31c

V.	Qts.	Lbs.	Cost.
Bran	4.0	2.0	2.50c
Alfalfa meal	1.0	0.5	0.50c
Cornmeal	1.0	1.5	3.00c
Shorts	2.0	1.5	1.95c
Barley meal	1.0	1.1	1.98c
Ground beans	1.0	1.1	1.10c
Beef scrap	1.0	1.5	4.50c
Coarse bone meal	0.5	1.0	2.00c
			17.53c

VI.	Qts.	Lbs.	Cost.
Bran	5.0	2.5	3.10c
Alfalfa meal	1.0	0.5	0.50c
Cornmeal	1.5	2.3	4.60c
Linseed O. C. meal	1.0	0.9	1.50c
Shorts	2.0	1.5	1.95c
Beef scrap	1.0	1.5	4.50c
Coarse bone meal	0.5	1.0	2.00c
			18.15c

The last column in the above tables was prepared here, using San Francisco prices as given in the RURAL PRESS quotations as a basis. These are figured down to the amounts named in the table and give a good illustration of the benefits of preparing the mash in accordance with current prices. Thus it will be seen that material for a mash for 100 hens for one day will cost, wholesale, 18½c according to formula I, 191½c according to formula II, 18¾c according to formula III, 20¼c by formula IV, 17½c by formula V, and 18c by formula VI, all being approximations. The saving by making the correct choice is indicated at once when one has a lot of hens and buys enough material to last the flock for a long time. The best way to mix these formulas is, of course, in large quantities, and they are for laying hens, not chickens or hens which are used for breeding purposes. Poultrymen who use these mashes or others closely resembling them report marked results.

A few pointers on the way to feed these mashes are given in the bulletin, as follows: "Salt should be added to every mash, about an ounce being sufficient. Pepper may be added occasionally. Fresh lean meat may be substituted for beef scrap in any of the formulas, three quarts of the fresh being equal to one of the dried. Cottage cheese may be substituted in the same proportion, except that it is advisable not to replace all of the meat, one-half quart beef scrap and one and a half quarts cottage cheese being a much better proportion. The equivalent in pounds is given for convenience in ordering. The quarts represent the amount for 100 hens and may be multiplied or divided ad libitum."

The bulletin, which was first issued in 1905 and revised several times later, can be had on request to the University of California, Berkeley, and should be in the hands of every poultry keeper.

PENDULOUS CROP IN TURKEYS.

To the Editor: What can you tell about the cause and cure for hanging crop in turkeys, which is a very distressing affair to look at, at least?—Grower, Tulare county.

The orthodox name for the trouble is "pendulous crop." It is more or less prevalent all through the San Joaquin valley, possibly beyond, and has received some attention from poultry experts. The conclusion is that it is not a disease, that it does not even involve pathological trouble, but is a mechanical affair which may not interfere with the health of the bird until it becomes mechanically impossible for the crop to discharge its proper function. It is believed to be caused by repeated distension of the crop owing to previous overfeeding, or to distension by the gas resulting from slow and defective digestion produced by overfeeding. The conclusion sems to be that the condition requires no treatment for fowls intended for the market, as it will not interfere with their health for a moderate period of time. Birds which are of extra value for breeding purposes or otherwise can be treated in this way:

First—Preventive treatment: feeding of foods easily digested and in moderate quantities.

Second—Local treatment: bathe in cold water in which one tablespoonful of vinegar and one teaspoonful of salt has been added to each pint. In extreme cases a bandage strong enough to lift the wall of the crop, but not sufficiently tight to interfere with the necessary movements of the muscular coat.

One can guess that the trouble may be due to bringing a wild bird so quickly to a course of high living. If the turkey has to fly a few miles to a damp spot for a salad, he probably does not gorge himself so frequently as he might when surrounded by broad acres of alfalfa. How you can guard against too high living for your birds is for you to study out.

PUBLICITY FOR COLD-STORAGE EGGS.

As part of a campaign to remove the prejudice against storage foodstuffs, 240,000 eggs were given away in Chicago at the International Refrigeration Exposition. The eggs were laid last April, and samples were tested a few days ago by experts from the United States Department of Agriculture.

POULTRY.

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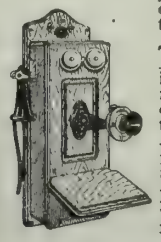

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GENERAL AGENTS.

The Home Circle.

The Children's Teeth.

The possession of sound, even teeth is to be congratulated, says A. B. W., in Ohio Farmer. While parents are giving the subject far more attention than formerly, there are still very many who have not yet awakened to its great importance. From earliest childhod, I considered teeth the bane of my life, for wakeful nights and a distorted face were not unfrequent. I remember more than once of losing several days of schooling when suffering from an ulcerated tooth, and after my second teeth appeared, the expense of keeping them in repair was simply enormous.

From this experience, I resolved that if I ever had children of my own, I would learn if so much punishment was necessary, and early formulated a very simple theory, as follows: In order to have good permanent teeth, one must take the best possible care of the first teeth, and this means not only keeping them clean, but keeping them filled and providing a bone-making diet. Our boy has never kept me awake with toothache, in fact he does not know the sensation, and he never had black or broken teeth, such as disfigure many children. I really think his first teeth might not have decayed at all had it not been for the medicines, lack of hearty food, and waste of tissue, incident to several long illnesses. However, when I discovered the cavities, I took him to a dentist forthwith (he was about five years old) and had them filled, and on account of this I have had the satisfaction of seeing his permanent teeth come in even, an impossibility when the baby teeth have to be extracted prematurely, which leaves the jaw shrunken.

By keeping the first teeth as long as possible, the jaw develops and a sufficient amount of room is thus provided for the large teeth. Even after the teeth begin to loosen, there is danger of extracting them too soon. Children must be prevented from loosening their teeth. I know it is very natural for them to do it, but if the teeth are let entirely alone, the new ones will push the old ones out—the way nature intended, and not until they begin to interfere with mastication should they be extracted. If decay is arrested early, the expense of filling will be small, and the pain but trifling, as the baby teeth have scarcely any roots. The child who has never experienced toothache, unless frightened by others, will have no dread of the dentist's chair. In fact, our boy thought it quite a novelty and when the instruments did hurt a little, a bargain was quickly made, a certain reward being sufficient. Many over-indulgent parents allow the little folks to "beg off," but this should not be allowed; it is best to have it over with as soon as possible. Do not call them finished until they are cleaned, and one cleansing will be sufficient for the first teeth if they are afterward brushed regularly.

The large molars that come directly back of the first teeth are mistaken by many for the first teeth, but they are not, and should be watched; these are sometimes cut before the second incisors, but usually push through at about the same time. White bread and milk and cookies seem to be the bill of fare for many little tots after they are weaned, which accounts largely for the soft teeth that give so much trouble. Instead of white bread there should be graham, cornbread, brown bread, rye, oatmeal, etc., and entire wheat flour makes delicious cookies and ginger-bread. Do not expect them to feel satisfied with oatmeal and milk every morning, day in and day out, but have the breakfast much varied; there are many different kinds of cereals now upon the market, not omitting the wholesome hasty pudding, which is delicious if properly cooked. The expense of keeping the children's teeth in repair is money well invested.

Make Not Thoughts Your Prison Walls.

"Make not thoughts your prison walls," the conquering Caesar said to Cleopatra, and it is advice that many women may take unto themselves, who scourge themselves and hamper and confine their liberties and narrow their opportunities because of some imaginary wall that shuts out the light and the air of righteous endeavor just as effectively as if it really existed. Why should a woman sit and mope at home and think of some unpleasantness when there is the great, wide outdoors, so full of beautiful things? Take yourself to task, dear woman, this very day. Break down those prison walls of thought and throw off the shackles of habit, and convention if need be, and breathe the pure air of liberty. Don't sit down to the breakfast table with the air of a martyr, knowing that you are tied hand and foot, as it were, and can't get out of that house-cleaning.

Assert your own independence and read the paper for full fifteen minutes. Read the advertisements and squander another fifteen minutes if necessary. Then when you begin to work see all the pretty things that you have—the dainty design on your napkins, the line of blue in the carpet, the beautiful bindings of your books, and linger a moment over your favorite picture as you dust it. Don't be imprisoned with the thought of your servitude. Get outside of it and make work but an incident in your life, whose real duty is to see the bright side of things and the loveliness of design, and even the cobwebs are more beautiful than anything you could possibly design yourself.

Don't think of the big hole when you are darning a stocking, but let your thoughts rest upon the beautiful thread, the intricacies of the stitch, and darn the stocking as though that were the only one in the world that you had to darn. Whoever does make the most of every opportunity? The poor, sad mother, smarting under the ungratefulness of a child, may see little of sunshine in her thought prison. But there are windows through which she may look back into the past, when the furry baby head lay upon her breast, and, if she will only see it, a ray of sunshine pointing the way to the future when the daughter with her own child upon her breast will understand. "Make not your thoughts your prisons," dear mother.—Exchange.

Questions About Motherhood.

Who is it that trains our young women to blush when babies are mentioned?

How often have we seen women arise and leave the room when some sane but simple-minded friend of the race expressed himself on the subject of increase in the family.

Men have no shyness in discussing babies; they do not change the subject and get flustered and all that sort of thing, as though something disgraceful were being broached.

But men are brutes, anyhow.

Most of the poems written about motherhood are from the pens of men.

Some one has tried to blame the decreasing birth rate (if it is decreasing) on woman suffrage. We shall have to go in some other direction for the reason.

Men do not pity a man who is the father of a new baby; women say, "Poor Mrs. Blank!" both before and after the baby arrives.

The truth is that babies are coming to be regarded as nuisances, as hindrances to the enjoyment of life, and as subjects which are not discussed in polite society.

It might be well, in view of the fact that we were all babies at one time or other, to organize a Bless the Babies League and re-educate our women folks back to the old human standards.—Judge.

Anchored to Peculiarities.

A man said to me, closing an incident he had just related: "But that's just the way I am; I'm granite—no one can influence me in the least—never could." And I did not resist the temptation to reply, "Which accounts for the fact that a man of your inherited abilities, your opportunities provided by a thoughtful father, your health and other advantages over so many who have far outstripped you, is, at the age of fifty, occupying a place in the range of human achievements very little beyond where his inheritance placed him. A clear commentary on the mistaken valuation of your own natural traits."

He was not pleased; and he was too old, perhaps too set in his ways, to profit by the little dig. But many a younger, more impressionable person is starting in on the same mistaken old trail, dug out by vanity and kept fresh by conceit.

The finest gold is found in quartz rock; but to obtain the metal of value, a large proportion of the natural rock must be destroyed. The gold is so mixed with that which is worthless, one being as much a primary element as the other, as to make the separation a difficult task and one calling for the highest order of mining intelligence. The old miner who would say, "The Creator mixed them this

Ghirardelli's Ground Chocolate

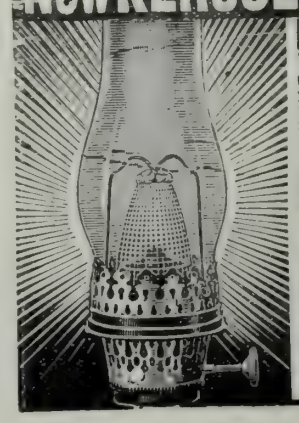
Use it for many purposes.

As a flavoring for puddings, ice cream, candy, cake, iceing and sauces, Ghirardelli's Ground Chocolate is unequaled for its delicate and pleasing flavor. And as a health beverage it is in a class by itself. So simple to prepare, so economical—so many practical ways to serve and use this beverage food product.

D. GHIRARDELLI CO.
San Francisco Since 1852

A sample can mailed free for the asking, will convince you of its quality.

New KEROSENE LIGHT BEATS ELECTRIC OR GASOLINE



10 Days FREE—Send No Money

We don't ask you to pay us a cent until you have used this wonderful modern light in your own home for ten days, then you may return it at our expense if not perfectly satisfied. We want you to prove for yourself that it gives five to fifteen times as much light as the ordinary oil lamp; beats electric, gasoline or acetylene. Lights and is put out just like the old oil lamp; costs

Only 1 Cent for 6 Hours

Gives a powerful white light, burns common coal oil (kerosene), no odor, smoke or noise, simple, clean, won't explode. Guaranteed.

$1000.00 Reward

will be given to the person who shows us an oil lamp equal to this Aladdin in every way (details of offer given in our circular). Would we dare make such a challenge to the world if there was the slightest doubt as to the merits of the Aladdin? We want one person in each locality to whom we can refer customers. Write quick for our 10 Day Absolutely Free Trial Proposition, Agents Wholesale Prices, and learn how to get ONE FREE.

AGENTS WANTED

to demonstrate in territory where oil lamps are in use. Experience unnecessary. Many agents average five sales a day and make $300.00 per month. One farmer cleared over $800.00 in 6 weeks. You can make money evenings and spare time. Write quick for territory and sample.

MANTLE LAMP CO., 76 Aladdin Bldg., Portland, Ore.

way, and this way they'll stay; it's their nature," would make about as much out of his mine as the man of granite makes out of himself.

Each person should consider himself crude materials in which there may run veins of gold, but in which there assuredly is much waste product. He should particularly watch for his natural characteristics—the stubble peculiar to his own field—and cherish them only when they are clearly conducive to successful living. Much must be entirely eradicated, much must be worked over and refined, and much must be grafted on, if he is to be particularly satisfied with the outcome.

Ventilation.

Of all the subjects that I am forced to talk of to patients of mine, ventilation is the most conspicuous one, owing to the many repetitions necessary.

It is odd how divergent different people's ideas of ventilation are and some of the queer things resorted to in order to avert drafts. Now a draft is a bad thing to be in, but true ventilation will not cause a draft.

We all know that our forefathers lived in log cabins with large chimneys, and that the suction that these alone caused was enough to ventilate places twice or even ten times as large.

Of course, we do not have to revert to the log cabin type of house, nor do we have to have large chimneys to acquire perfect ventilation, but nevertheless this reference is a good illustration for an object lesson.

Hot air rises, cold air falls. That is the basic principle. Hot air heating is known to be best because it curculates the air. But the air, where does it come from? from the interior. Now, no matter what we do, we always have some dislike for cellar air, haven't we?

Hot air circulation can well be taken care of if we have a leader for the cold air from a nearby cellar window installed whereby the cold air may be brought from the outside, and thus we avert this objectionable feature of cold weather ventilation.

Now, then, it will be an easy matter by having small frames made with muslin over them to fit perfectly on the inside of windows, something on the order of screens. These can be placed at top and bottom (only a few inches wide will be sufficient), and thus the ventilating will be complete without fear of draft, because in this manner the air merely percolates through, stopping all gusts of breezes.

Of course, we all know that if any changes are to be made in the hot air systems in our homes they should be taken care of during the mild weather, for when the chills of late autumn or the cold spells of winter are upon us we are very reluctant of having the furnace put out of commission so that the heater and range man can make changes if even for a day; so have all furnace matters attended to in summer time.—Dr. Olemo De Luke.

Overeating.

Many people eat to excess, their natural appetite, which might be trusted not to lead them far wrong, being stimulated by sauces and condiments. With a great variety of food and made dishes, the healthy appetite loses its sensibility, as it were, and is unable to act as a guide. Once in a way such indiscretion may be indulged in without worse penalties than indigestion, but continued excess leads to widespread disturbance in several directions. Fat accumulates in the body [illegible] the very [illegible] [illegible] of [illegible] may [illegible] [illegible] and so continually [illegible] upon it, the attempt to dispose of the waste product burdens the organs of excretion, and as they fail to meet the demand made on them, effete matters remain in the circulation. The blood, charged with such materials, is not fit to nourish the body, and gradually organs not at first concerned are indirectly affected, especially the brain and nervous system. Thus indigestion, sluggish and gorged liver, disordered bowels, headache, sleeplessness, giddiness, etc., are among the results first to be observed.

Care of the Baby on the Farm.

Amusing the baby is often a problem to the mother on the farm. One of the ordinary clothes baskets lined with pillows, one covering the bottom and others the sides, makes the best kind of a nest for the baby. It is far better than a cradle or cab. It is so firmly balanced there is no danger of baby falling out, and it can be placed either on the floor or on the table.

A portable railing in the form of a square—or a box will do—serves as a very helpful and comfortable place for the baby. A blanket can be placed upon the floor of any room in which the mother is at work, and the baby placed on it with his toys, and all surrounded with the railing; or, if a box is used, castors can be placed on the bottom so it will be easily moved, the box padded on the inside.

There is nothing more beneficial to the muscles, especially those of the back, than the natural tumbling about of little children; the cradle or carriage does not afford sufficient exercise. Once inside the railing or in the box, it is impossible for the child to get out, and both mother and child can rest in peace.—Mrs. Jessie Whitsitt.

Toot Your Own Horn.

A hen is not supposed to have much common sense or tact, yet every time she lays an egg she cackles for the fact.

A rooster hasn't got a lot of intellect to show, but none the less most roosters have enough good sense to crow.

The mule, the most despised of beasts, has a persistent way of letting people know he's round by his insistent bray.

The busy little bees they buzz, bulls bellow and cows moo, and watch-dogs bark and ganders quack, and doves and pigeons coo.

The peacock spreads his tail and squawks; pigs squeal and robins sing, and even serpents know enough to hiss before they sting.

But man, the greatest masterpiece that Nature could devise, will often stop and hesitate before he'll advertise.

Hoarseness and Loss of Voice.

It is not uncommon to hear a woman who can scarcely speak above a whisper [illegible] [illegible] [illegible]

THE MARKETS.

San Francisco, Oct. 8, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Spot offerings lately have been rather light, but ample supplies are available from the North, and there is an easier feeling as to values on some lines with a decline of about 2½c. Northern bluestem, however, is slightly higher, and Turkey red is higher.

California Club, ctl	$1.50	@1.52½
Forty-fold	1.50	@1.55
Northern Club	1.50	@1.52½
Northern Bluestem	1.67½	@1.70
Northern Red	1.55	@1.70

BARLEY.

Arrivals are larger than for some time past, and the spot market is easier, with lower prices in the East, though local quotations are maintained. Trading in December barley has been quite heavy.

Brewing and Shipping	**$1.40**	**@1.45**
Choice Feed, per ctl	**1.35**	**@1.40**
Common Feed	**1.30**	**@1.35**

OATS.

No further change in prices is noted, and business is not particularly brisk, though there is a fair demand for red seed, and a good movement is expected soon.

Red Feed	**$1.65**	**@1.85**
Seed	**2.25**	**@2.30**
Gray		**Nominal**
White	**1.55**	**@1.60**
Black Seed	**2.75**	**@3.25**

CORN.

Corn is almost entirely nominal, as the present nigh prices have materially curtailed the demand. There is hardly any local stock moving here, and Eastern corn is coming in slowly.

California Yellow		**Nominal**
Eastern Yellow	**$1.95**	**@2.00**
Eastern White		**Nominal**

RYE.

The only feature in the market is a demand for seed, and recleaned stock for that purpose is offered at an advance over the old quotations. Aside from this there is very little business, ordinary stock being quoted as before.

Rye, per ctl	**$1.45**	**@1.50**
Seed	**1.65**	**@1.70**

BEANS.

The decline in beans seems to have stopped for the present, and the market is showing more firmness than for some time past, though offerings in some lines are rather large. Blackeyes have been marked up sharply, the output being rather less than was counted on. Horsebeans and red kidneys have also been marked up a little. The shipping demand is now picking up in good shape, and is expected to continue for some time, while arrivals of the new crop are still increasing. Limas are unchanged here, but more firmness is reported in the growing district, where buyers are trying to get supplies.

Bayos, per ctl	**$3.25**	**@3.40**
Blackeyes	**3.75**	**@4.00**
Cranberry Beans	**3.75**	**@4.00**
Horse Beans	**1.90**	**@2.10**
Small Whites	**5.00**	**@5.25**
Large Whites	**3.10**	**@3.25**
Limas	**4.75**	**@4.85**
Pea		**Nominal**
Pink	**2.75**	**@2.85**
Red Kidneys	**3.40**	**@3.50**
Mexican Red	**3.40**	**@3.65**

SEEDS.

No further change in quotations is noted this week, and there is not yet any very general demand in any line. A little broomcorn seed has come in, but the value is not very well established.

Alfalfa	**12½@15**	**c**
Broomcorn seed, per ton		**Nominal**
Brown Mustard, per lb		**3¾c**
Canary	**7**	**@ 7½c**
Hemp		**3 c**
Millet	**2½@**	**2¾c**
Timothy		**Nominal**
Yellow Mustard		**Nominal**

FLOUR.

Prices are steadily held at the former level, with little indication of change in prospect.

Cal. Family Extras	**$5.60**	**@6.00**
Bakers' Extras	**4.65**	**@5.20**
Superfine	**3.90**	**@4.10**
Oregon and Washington		**4.90**

Hay and Feedstuffs.

HAY.

The market shows very little feature at present. Arrivals continue very light, as the amount left in the fields is diminishing, and there are now only a few scattered lots to be shipped. The local market is in about the same quiet condition as for a month past, as both dealers and buyers have an abundance of stock on hand and are buying very little. While there is a demand for strictly fancy grain hay, most of the offerings are of only medium quality, which finds very little demand at present, and on most grades there is a rather easy feeling as to values. Alfalfa also is weak, with excessive supplies and only a moderate demand at the moment.

No. 1 Wheat, or Wheat and Oat	**$15.50@16.50**
do No. 2	**14.00@15.50**
Lower grades	**13.00@14.00**
Tame Oats	**14.50@16.50**
Wild Oats	**12.00@14.50**
Alfalfa	**10.00@13.00**
Stock Hay	**9.00@10.00**
Straw, per bale	**60@ 95c**

FEEDSTUFFS.

Bran is rather easy, with offerings in excess of requirements at the moment, and some business has been done below quotations. Practically all supplies, however, are coming from the North, and renewed firmness is expected shortly. Other lines are unchanged.

Alfalfa Meal, per ton	**$18.50@19.50**
Bran, per ton	**25.00@26.00**
Oilcake Meal	**34.00@35.00**
Cocoanut Cake or Meal	**29.50@30.00**
Cracked Corn	**42.00@43.00**
Middlings	**33.00@34.00**
Rolled Barley	**29.00@30.00**
Rolled Oats	**34.00@35.00**
Shorts	**27.00@28.00**

Garden Truck.

VEGETABLES.

Several descriptions of summer vegetables are arriving in noticeably smaller quantities than for some time past, and the market accordingly shows a little more firmness. Notwithstanding the comparatively favorable weather, receipts of tomatoes are smaller, and god stock is cleaning up at a fair advance, though there is quite a bit of unattractive stock sold at irregular prices. Corn is quoted as before, with little offered or wanted. Green peas are scarce and higher, and lima and string beans are offered only in limited quantity, but there is no very large demand. Desirable offerings of okra and summer squash have been marked up quite sharply, and continue to move well. Cucumbers also are in good demand at higher prices. Arrivals of onions have been rather light, as the river crop is cleaning up, and local offerings are rather closely held at a sharp advance.

Onions: New Yellow, River, ctl.	**$ 1.25@**	**1.40**
Garlic, per lb	**6@**	**8c**
Cucumbers, per box	**50@**	**75c**
Green Peppers, box	**25@**	**50c**
Carrots, per sack		**75c**
Green Peas, lb	**5@**	**6c**
String Beans, lb	**3@**	**4c**
Summer Squash, lug box	**40@**	**75c**
Green Corn, choice, sack	**1.00@**	**2.25**
Okra, box	**25@**	**40c**
Tomatoes, box	**30@**	**85c**
Eggplant, box	**40@**	**50c**
Lima Beans, lb	**2@**	**3c**
Sprouts, lb.	**3@**	**4c**
Celery, doz.	**30@**	**40c**

POTATOES.

River stock shows a little wider range, desirable lots being higher, though local arrivals have been quite large. There is a rather firm feeling, however, as it is reported that about two-thirds of the delta crop has been cleaned up. Good sweet potatoes are firmly held, but ordinary lots are easy.

Salinas, ctl.	$ 1.75@	1.80
New River Whites	75c@	1.10
Sweet Potatoes, per ctl	1.00@	1.50
Oregon Burbanks	**1.25@**	**1.30**

Dairy Produce.

POULTRY.

No change whatever has been made in poultry prices this week. Arrivals of both local and Eastern chickens are comparatively large, but there has been a marked increase in demand, and offerings clean up well at steady prices. Turkeys are getting more attention, but with larger offerings values stand as before.

Large Broilers, per lb	23	@24 c
Small Broilers, per lb	24	@25 c
Fryers, per lb	23	@24 c
Hens, extra, per lb		18 c
Hens, large, per lb	17	@18 c
Small Hens, per lb	14	@15 c
Old Roosters, per lb	11	@12½c
Young Roosters, per lb	23	@24 c
Squabs, per doz	$ 1.50@	2.00
Geese, per pair	2.00@	2.50
Ducks, doz.	4.50@	6.00
Turkeys, live, per lb	24	@25 c
do dressed	25	@28 c

BUTTER.

The advance of a week ago was not maintained, and a further decline is noted at present, with fairly liberal offerings, though there is an active demand for extras, causing a firm feeling both on the Exchange and in the street. The lower grades are unchanged and barely steady, finding considerable competition from storage stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	34	34½	34½	34	34	33½
Prime Firsts	30	30	30	30	30	30
Firsts	29	29	29	29	29	29

EGGS.

After a little fluctuation, with varying supplies, both extras and pullets have passed the high point of last week. Offerings are still decreasing, while the demand is decidedly active, and values are much higher than a year ago.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	44	45	47	47	47	48
Selected Pullets	33	34	34	34	34½	35

CHEESE.

Fancy flats have lost the ½c gained last week, and are barely steady at the new figure, Y. A.'s remaining firm as last quoted. Monterey cheese is a little stronger, with little offered below 17c.

Fancy California Flats, per lb	16	c
New Young Americas, fancy	16	c
Monterey or Jack Cheese	17 @18	c

Deciduous Fruit.

While supplies in some lines are not unusually heavy, some in fact being rather scarce, buyers are taking comparatively little interest, and values in many lines tend to easiness. Some descriptions of apples have been marked up a little, owing to the light production, but do not receive much attention in the local trade, and there is quite a lot of off-grade stock moving at irregular prices. Some varieties of pears are a little higher, but move off slowly, and there is only a moderate demand for storage Bartletts. Peaches are very cheap, most arrivals in small packages being of very poor quality, though some fancy stock in carriers is sold up to 90c. Figs are lower, as the crop is being cleaned up and the demand is light. Most lines of grapes are lower, with liberal offerings, including considerable rather poor stock. Good cantaloupes are doing a little better, with somewhat lighter supplies. Coos Bay cranberries are lower, but move fairly well at the prices, while strawberries and blackberries are a little firmer.

Strawberries, chest	$ 2.50@	4.50
Blackberries, chest	2.00@	4.50
Raspberries, chest	4.00@	6.00
Huckleberries, lb.	4@	7c
Cranberries, Coos Bay, box	2.25@	2.50
Cape Cod, bbl	8.00@	8.50
Apples:		
Spitzenbergs	1.00@	1.50
Greenings	75c@	1.10
Bellefleur	1.00@	1.30
Newtown Pippins	1.15@	1.50
Common	50@	75c
Pears, Bartlett, box	1.75@	2.25
Other varieties	75c@	1.50
Peaches, box	20@	50c
Lugs	50@	85c
Plums, crate	65c@	1.00
Figs, double layer, drawer	40@	60c
Cantaloupes, River, lugs	75c@	1.25
Watermelons, per dozen	1.75@	3.00
Grapes: Seedless, lugs	90c@	1.00
Malaga, crate	50@	65c
Muscat	45@	75c
Black, lugs	50@	65c
Tokay, lugs	75c@	1.00
Cornichon, crate	65@	75c
Isabella	60@	75c
Quinces, box	50@	75c
Pomegranates, box	50c@	1.00
Persimmons, box	1.00@	1.50

Dried Fruits.

The market does not show much feature at present, prices remaining about the same as for some time past, with a firm feeling in all lines. Packers are rapidly making shipments on the orders booked in the last month or so, and are doing some buying in the country, but their principal requirements are said to be covered. Under the prevailing financial conditions, Eastern buyers are not disposed to place additional business, and foreign buyers consider prices too high for their markets at present, but the movement has already been very good in proportion to the crop, and the outlook for values is favorable. Raisins continue to advance, and prunes are extremely firm, with large sizes closely cleaned up. Offers of 7c for some sizes are reported in the Santa Clara district. Apricots are pretty well out of growers' hands and peaches are firmly held. The New York Journal of Commerce says:

"Little business in forward shipments from California is being done at present. Packers are reported to be busy getting out deliveries on early fall shipment orders and are not at present seeking additional business, particularly as crop conditions are favorable for better prices later, when the adjustment of supplies and demand on early transactions has been established. There are now no offerings of California prunes for October shipment on a less basis than 6⅛c for the four sizes, f.o.b. Coast shipping points. The spot market for prunes is dull but firm, on the basis of previous quotations.

"California dried peaches get little attention at present from the local distributing trade, but advices from the Coast continue to reflect a firm feeling on the part of sellers there, due to the fairly close clean up of the 1913 crop on orders from the West and the South, which sections provide the big market for this crop. Apricots being out of the hands of growers and in light supply with packers, are firm, but there is not much demand from any quarter at present. Peaches and apricots on the spot here are steady, though the consuming season has not yet opened.

"All California raisins are firm under the domination of the situation by the California Associated Raisin Co. The crop of Muscats promises to be a fine one, but is somewhat short of last season's yield. Old raisins are held with quite as much firmness as new. Eastern buyers are said to be urging the Associated company to withhold offerings of the 1912 crop until the 1913 product has been more largely absorbed."

Evap. Apples, 1913	6½@	7 c
Apricots, 1913	10	@13 c
Figs, White	3	@ 4 c
Black	2½@	3 c
Calimyrna		4½c
Prunes, 4-size basis	5	@ 6 c
Peaches	4¾@	5 c
Pears	6	@ 7 c
Raisins (in sweatbox):		
Loose Muscatels		3¾c
Thompson Seedless	4	@ 4½c
Seedless Sultanas		4 c

Citrus Fruits.

The season of 1912-13 is rapidly drawing to a close, it being stated that practically valencias will be out of the way by the middle of next week. Prices are good, averaging on the Eastern auctions from $2.50 to $7.50 per box. The lemon market is off, though the sales are still good, but the very high prices have been cut by foreign importations.

New oranges from the Tulare district are already being shipped to Australia, and Eastern shipments from that section will commence the latter part of October. The prospects for a fair crop from the State the coming season are good. The trees in the south are generally in fine condition, and in the northern part the crop will be larger than last year.

Local prices stand the same as last week. Business is rather quiet in all lines, and no great activity is expected for the next few weeks.

Oranges (per box):		
Valencias	$ 4.00@	6.00
Grapefruit, seedless	5.50@	6.00
Lemons	4.50@	7.75
Limes	10.00@	12.00

Nuts, Honey, Hops, Etc.

NUTS.

Almonds are closely cleaned up, the opening prices being nominally maintained. The new crop walnut prices are very high, and while the lack of supplies has caused some buying, the trade is rather slow to take hold. The crop is fully 20% short, owing to the hot weather of a month ago.

Almonds, new crop—	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts:	
No. 1 Softshell, per lb	16 c

No. 1 Hardshell	15½c
No. 2	11½c
Budded	19 c

HONEY.

The local trade is now fairly well supplied for current requirements, and business is very quiet. In the absence of large offerings from shipping points, however, values are well maintained.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Light	30 @32 c
Dark	28 @30 c

HOPS.

After the heavy movement of the last few weeks the market is a little less active, with much of the stock remaining unsold held above the views of buyers, who have so far been unwilling to go above last week's figures.

1913 .....20@26c

Live Stock.

Offerings of calves have been very light of late, and prices are higher. A good many shipments of sheep and cattle are coming in from Nevada, and a good many feeders are going to Nevada points from northern California.

Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	8¼@ 8½c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4 @ 4¼c
Ewes	3¼@ 3½c
Lambs: Suckling	5¼@ 5¾c

DRESSED MEATS.

Steers	12¼@12¾c
Heifers	11½@12½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

Little was accomplished at the fall wool sales held in the past week, most growers holding for an advance which buyers were unwilling to make. A little more movement of California wools is reported in the East, but values have been rather low.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

Values are firmly maintained, as offerings everywhere are decidedly light, and inquiries are coming out more freely than for some time past.

Heavy Steers, over 56 lbs.	13½c
Medium	12½c
Light Steers, under 48 lbs.	11½@12½c
Heavy Cows, over 50 lbs.	11½@12½c
Light Cows, 30 to 50 lbs.	13 c
Kip	13½@15 c
Veal	16½@18 c
Calf	16½@18 c
Dry—	
Dry Hides	25 @26 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.25
Medium	1.75
Small	75c
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

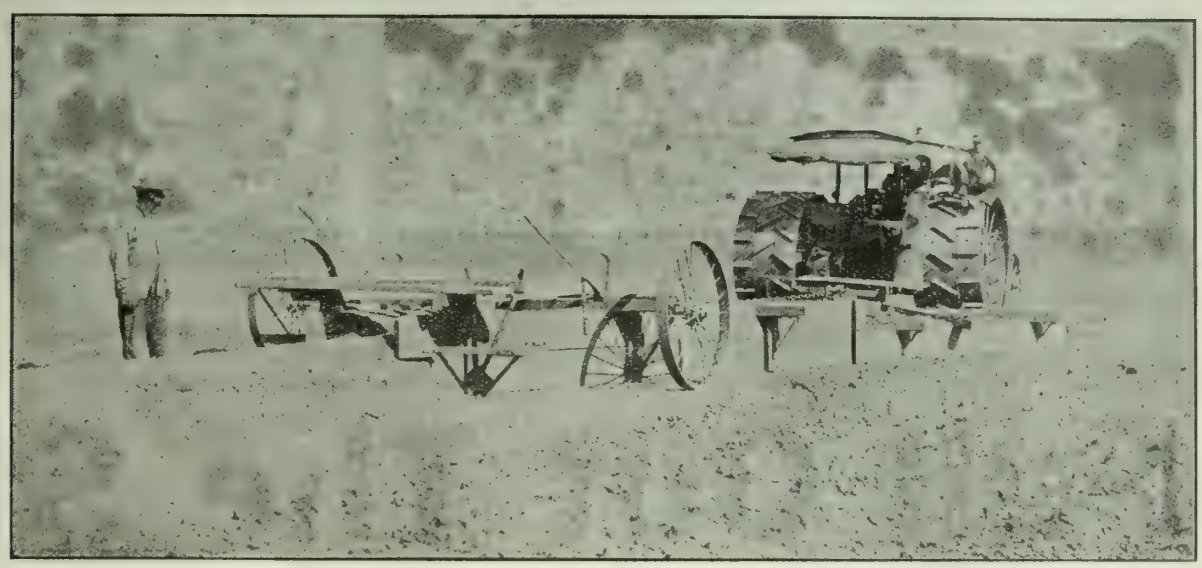
Last week's sale brought out a much better showing of interest on the part of local buyers than has been seen for some months, and with a moderate number of drafters going on sale this week it is expected that prices will show some improvement.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	200@225
Chunks, 1350 to 1500 lbs	100@150
Wagon Horses, 1250 to 1350	100@125
Delivery Horses, 1050 to 1250	75@100
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

Something New—Schmeiser Alfalfa Land Checker and Leveler



Levels and checks land at one-third the cost of doing such work by any other method.
Levels and checks the land better and quicker than any other implement, and
SAVES YOU TWO-THIRDS (2/3) THE COST.
50 to 100 acres checked and 25 to 50 acres leveled, in one day, using either team or engine.
If you don't believe that SCHMEISER ALFALFA LAND CHECKER AND LEVELER will save you two-thirds the cost, come to Davis and see it in daily operation. Then you'll KNOW.

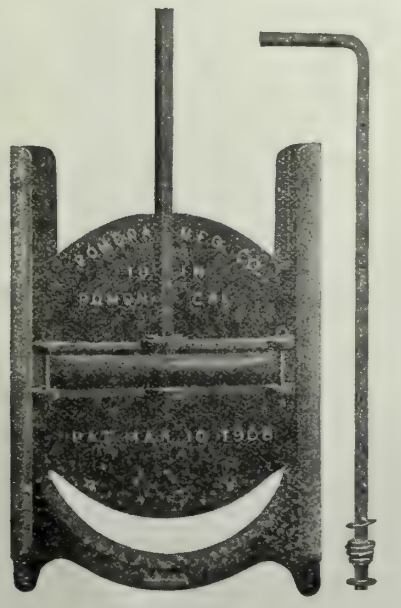
Schmeiser Manufacturing Company, Davis, California

Insist on "Pomona" GATES AND VALVES

FOR CEMENT PIPE IRRIGATION

Pomona Gates and Valves are manufactured of the best materials, by a concern that has the ability and equipment to make them right. They are of the simplest construction, having no loose parts to be misplaced or get out of order; are very strong and low in price. You will find it money in pocket to insist upon Pomona Gates and Valves being installed in your orchard, field or vineyard.

The POMONA Patent Pressure Gate



is a vital necessity where water is delivered through one service pipe to different levels.

The Pomona Patent Pressure Gate is the best and most practical gate on the market. It is simple in construction—cheap in price—and as durable as solid iron. Locks absolutely water tight when closed, and can be easily, quickly and perfectly regulated. Has no rubber or wooden facing to rot or wear out.

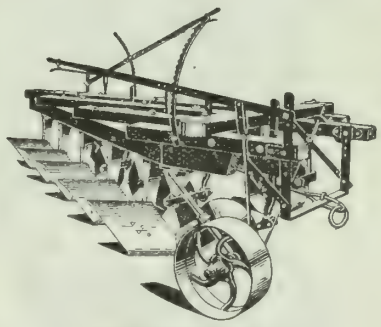
Write for Valve Catalog "P"

—giving full descriptions and prices of our gates and valves, together with valuable information on irrigation, water tables, etc. A copy will be sent free to any address upon request.

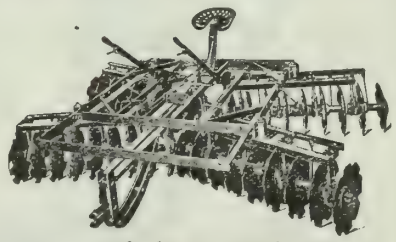
We are also the manufacturers of the well-known Pomona Deep Well Pump—the acknowledged leader among all pumps where a deep lift is required. Write us about your requirements or come to Pomona and see us.

Pomona Manufacturing Co., Pomona, Cal.

Located in the center of the largest deep well irrigation district in the world.
San Joaquin Valley Agents: PEASE-BUNDY-TAYLOR CO., PORTERVILLE.



SHAWSTOCKTON
HORSE OR TRACTION GANG PLOWS.
Our Own Manufacture.
Furnished with Slip Shares, Reversible Mold or Oliver Bottoms.
Write for Prices and Catalog.
THE H. C. SHAW COMPANY
Stockton, Cal.



"Imperial" Double Duty Engine Disc Harrows

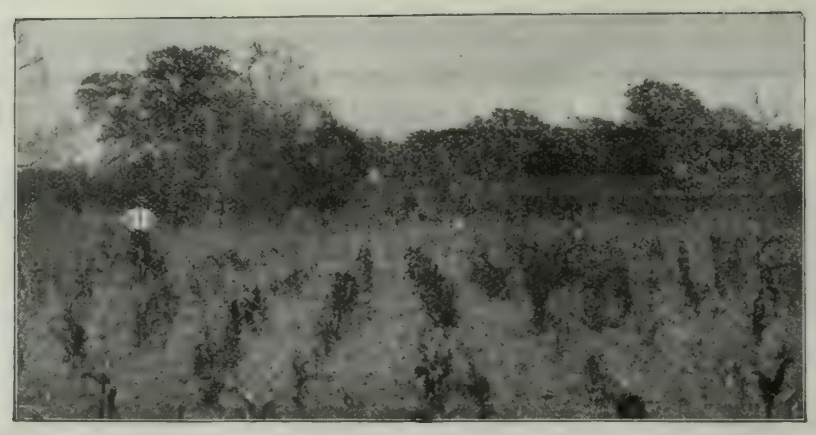
Strongly built, simple in construction, easily operated.
It isn't a question of whether you can afford one, but whether you can afford to do without one.
Write for Prices and Catalog.
THE H. C. SHAW COMPANY
Stockton, Cal.
Wholesale Distributors.

An Engine of Quality

OUR ENGINES ARE GUARANTEED FOR FIVE YEARS

All Engines are furnished with Magneto.
The Patent Roller Valve Gear reduces the moving parts and upkeep costs. **Armstrong Engines** are a quality product at the price of the inferior. 1½, 2½, 4½, 6, 8, 10, 15, 20-h.p. sizes. Write for catalog and state requirements. **Miller Pumps** are World beaters. If interested get our catalog.
Norman B. Miller Co. San Francisco, Cal.
503 MARKET STREET

The Winters cannery at Fairfield closed the season last Saturday with a big dinner to the employees. There were 50,000 cases of fruit put up and the plant will be enlarged to a capacity of 80,000 cases for next year.

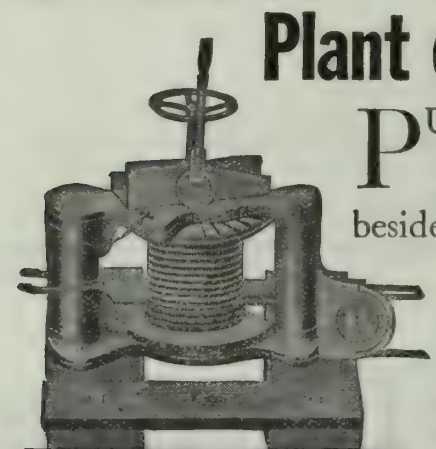


Here are two actual photographs taken the same day the same hour. They illustrate two fields of corn—*one adjoining the other*. The scene at the left shows an average corn field. The scene at the right shows a field in which stumps stood last year. It took no more seed, no more labor, no more investment of time or money, to raise the field that will probably produce a 90 bushel-per-acre crop than the average field that will probably produce a 35 bushel-per-acre crop The climate was the same for both fields—and the rainfall was the same.

We merely want to show you how much money you are losing by leaving the stumps stand, when you can so easily turn those stumpy acres into *dollars*.

Pull Out The Stumps

Plant on Virgin Soil—And Reap a Double Harvest



PULL out the stumps! Stump land eats up half the money your land is worth if cleared—and *all* the money you would get if you raised *crops* where the stumps now stand besides the taxes which now return you *nothing!* Land is too high priced to be wasted that way. Crops bring in too much money to be *passed up* that way. You have *paid* for all your land—why not *farm* all of it?

HERCULES Stump Puller

All Steel—Triple Power 30 Days Free Trial 3 Year Guarantee

Send Your Name Now For This Great Book Of Facts

Let me send you my new, fine, free book at once. I want to show you proof of how you can make $1,281 profit on forty acres the first year and $750 every year after, in extra crops and added value of land — by pulling stumps with the Hercules—and how you can make big money in your spare time by pulling stumps for your neighbors or by renting your machine at a nice profit.

Clears an Acre of Land a Day

My book shows actual photographs and prints actual letters from owners, telling of the remarkable feats of the Hercules—how it pulls any size stump, green tree or hedge in less than five minutes—how it easily pulls an acre or more a day. Read how one man increased his land value from $25 an acre to $125. Read how easy it is to *clear an acre or more of land a day*. The fastest working machine made. Prove to yourself that the Hercules pulls the biggest stump in five minutes—an acre or more a day—and three acres without moving the machine. Settle the question of stumpy land once for all. My book will tell you how—the quickest, cheapest, surest, *safest way*.

Special Features

The Hercules is the only all steel triple power Stump Puller made. It is the only puller that has the single, double and triple power features, giving you three machines in one. There isn't a stump, green tree or hedge grown that the Hercules won't pull out without straining or breaking any castings. It's the only low-down constructed puller that has self-anchoring and stump-anchoring features — the only one with double safety ratchets, that insure the absolute safety of men and team. Its all steel construction means 60 per cent less weight and 400 per cent greater strength than any cast-iron or "semi-steel" puller made.

New Low Price

My special advertising offer will enable me to quote you my new low price—a figure that saves you at least 50 per cent of the *regular* price, and which will make you a Hercules owner if you have the least use for a machine that rids your fields of all standing stumps. I can continue this offer only a short while longer—to first buyers in each locality.

Mail Postal or Coupon

Just simply your name and address on the coupon or on a postal is all I want so I can send you the facts, my book, 30 day trial offer, 3 year guarantee and special price proposition. Send *now* before you forget and see how easy you can clear your land—and what it means. Address

B. A. Fuller, President, HERCULES MANUFACTURING CO.
812 22nd Street, CENTERVILLE, IOWA

Get My Fine Free Book I want you to mail me the coupon or a postal. It will give me an opportunity of sending my grand free book about pulling stumps. It will enable you to read all about the Hercules—its features, the 30 day free trial offer and my remarkable 3 year guarantee which insures *the replacement of any broken casting for 3 years—whether the fault is yours or the machine.*

B. A. Fuller
President

Says to You:

BE sure to mail me the coupon at once. When you read my fine free book you will know what it means to pull out the stumps and how easily it can be done with the Hercules. You will see what *others* have done with the Hercules and what *you* can do. And my special price will interest you. I'll save you big money if you write me now. Stop *wishing* the stumps were out — get busy with a Hercules and they'll *be out—big profits for you.*

Mail Me the Coupon or a Postal NOW!

Free Books Coupon

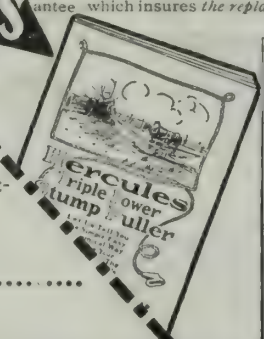
Hercules Mfg. Co.
812 22nd Street
Centerville, Iowa

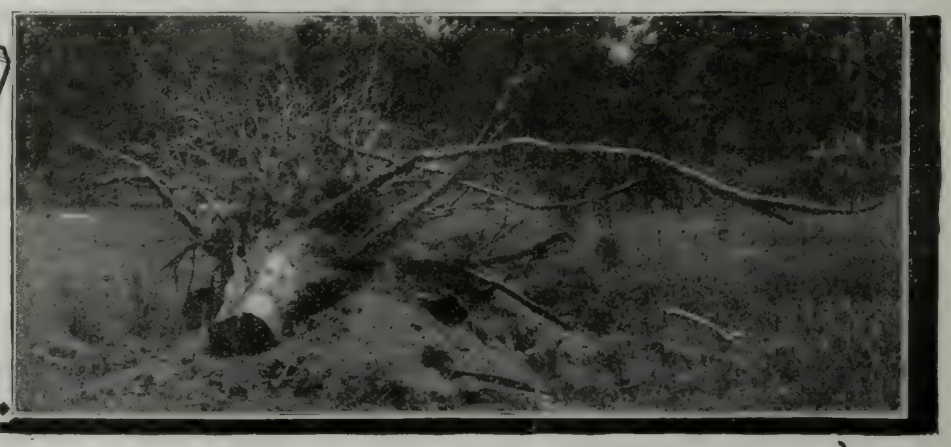
Gentlemen: Please send me all free books about the only All-Steel Triple-Power Stump Puller. Also your 30-day free trial and low-price-to-first-buyers proposition

Name .....

Town .....

State .....R. F. D.....





NOTICE!

Grand Prize Yellow Strand Wire Rope used on HERCULES PULLERS

It is this **Yellow** strand wire rope that won **first prize** at St. Louis Exposition, **proving twice as good as next best cable.** It is this **Yellow** strand wire rope that is being used by the **U. S. Government at Panama on the real important work** of building the canal. And experts say this **Yellow** strand rope is one of the big helps that will enable Uncle Sam to complete the canal a whole year before expected. **And it is the Yellow strand** wire rope that is used exclusively on the Hercules Stump Puller—**not a green strand, blue strand, white strand or red strand**—but a YELLOW strand—don't forget that—and don't let any unscrupulous person or company confse you.

CALIFORNIA STATE LIBRARY

THE PACIFIC RURAL PRESS

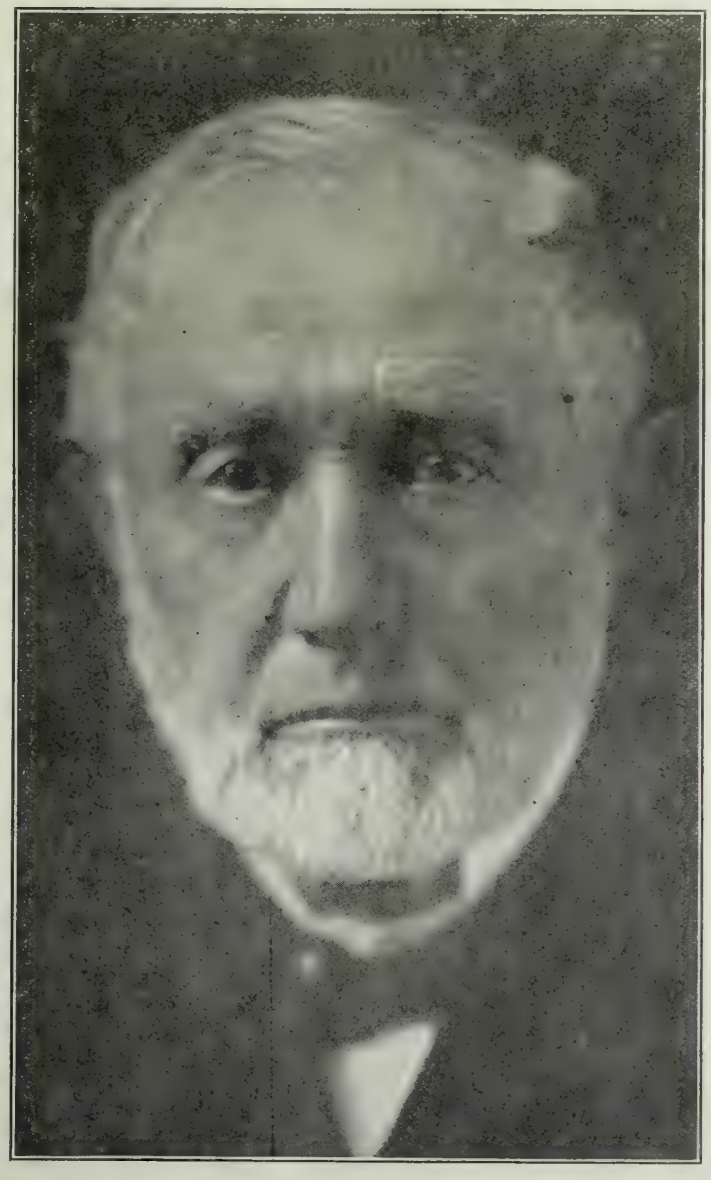
Vol. LXXXVI. No. 16. SAN FRANCISCO, SATURDAY, OCTOBER 18, 1913. Forty-Third Year.

Henry Miller and His Empire.

[Written for the PACIFIC RURAL PRESS by PAUL PARKER.]

The test of fame, it is said, rests on the number of times one's name is repeated, or brought to mind, by others in the course of a year. Accordingly, Henry Miller, last and greatest of California land and cattle kings, should be assigned a lofty pedestal in the Hall of Fame. Wherever one goes on the Pacific Slope, sheep camp or millionaire's abode, anecdotes are told and retold of his wonderful foresight, his prodigious memory, his deep insight into the stock business, and the amount of his holdings.

That this shrewd German should arrive in San Francisco in 1850, aged 23 years, and not be attracted by the glitter of the gold mines is of no surprise. He saw where the real money was to be made, furnishing meat for the hungry stomachs, and he immediately started in the butcher business. By 1858 business had grown so large that he joined forces with Charles Lux under the firm name of Miller & Lux. It made a powerful combination, did these two master minds. Miller attended to the outside work, buying land, cattle and farming, while Lux looked after the financial end in San Francisco. In 1887 Lux died, and some time later Miller bought out his interests in the firm. Today Henry Miller is considered the largest land and cattle owner in the United States. Estimates of his holdings vary greatly, some will declare 9,000,000 acres, others that 2,000,000 acres is putting it high. There is the same divergence on his alfalfa acreage; some say 90,000 acres, others 190,000. But even the most conservative figures still leave Mr. Miller a principality.



Henry Miller, Cattle King of California.

In acquiring property this far sighted German showed the greatest fire of his genius by annexing all the water rights adjacent to his land, a point often overlooked in the early days of cheap land and money. Men, able to judge in these matters have said that this is the secret of Miller's success. He had his eyes set on the future, when water would be at premium, so he appropriated, after the custom of the time, thousands of miner's inches of water from the rivers. He took up swamp land along streams and waterways so as to protect his good land farther back. Eventually, when the other settlers awoke to the absolute necessity of having water, there was none. As a result, many suits have been brought to force Miller to give up some of the water, and he has been on one side or the other of more water tangles than any man in the West.

To acquire and control all this land and water took years of untiring and fearless work. Night and day would he travel over his property, enduring all manner of hardships without a whimper. Or, as he once told a superintendent who objected to working at night, "There is no night too dark or too stormy to prevent me from attending to my business." And his employees relate countless stories to prove this. It was a common occurrence for him to drive all day over some of his San Joaquin holdings, then at night, with a fresh team, he would drive 80 miles to his Bloomfield ranch in Santa Clara county. He would work there all day, and that night return to the San Joaquin. His only sleep being snatched in the buggy. State Library 7-1-14 it sleep is Napoleonic.

For years these trips were taken through a country infested with cattle thieves and cut throats, yet they never harmed him. Often was he held up, but purposely he carried a small sum with him, so his loss was practically nothing. The robbers never harmed him because he was so lenient with them when they were caught stealing his stock; also he gave food to every wayfarer who stopped at his ranches. Miller's attitude toward the thieves is shown by the following incident. Once he was held up in the Pacheco pass while enroute to Gilroy. As the robber took all his money, Miller asked him to have a small portion back, as he needed it for a special purpose. A few months later, Miller was in a small San Joaquin town and he walked up to a Mexican and said: "Here's the money I borrowed from you in the Pacheco pass." After some urging, the robber took the money, and no one would have heard of it had not the Mexican himself told of the incident.

Henry Miller's idea of being friendly with everyone, good and bad, has helped him greatly in the management of his ranches. He aimed always to be friendly with his neighbors, for, as he says, "a friendly neighbor is a great asset." We see him also on an amicable footing with the communities about his holdings. If the base-ball field needed leveling, his teams and graders could be depended upon; if the school house needed a flag, a bell or new books, the uplifted palm never returned empty. Every time there was a celebration, it was Miller's beeves and sheep which were thrown over the pit for the barbecue. With individuals who had been square in their dealings with him, Miller was very generous in time of need, but if they had not, he never forgave them.

The Master of Detail.—It would naturally be supposed that one with his acres, his live stock and the resultant cares there from, would have no time for the small things. Not so with Henry Miller. The minutest detail of farm management did not escape him. He attended to the detail first and got the big things later, for as he says, "Fortunes are made by taking care of the little things."

While making his tours of inspection he usually dropped in unexpectedly at a ranch. Floods or storms never balked him. Instead of waiting for a rain to moderate, he would start out in it for fear it

(*Continued on Page 373.*)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

TWO DOLLARS PER YEAR IN ADVANCE

Entered at S. F. Postoffice as second-class mail matter.

Address all communications and make checks or money orders payable to

PACIFIC RURAL PRESS CO., - - PUBLISHERS

Advertising rates made known on application.

Copy for change of advertisements must be in office on Monday preceding date of issue. New advertising copy must reach the office by Wednesday a. m. to insure insertion that week.

E. J. WICKSON - - - - - - - - Editor
FRANK HONEYWELL - - - - - Manager
W. H. SCHRADER - - - - Adv. Manager
D. J. WHITNEY - - - - Associate Editor

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Oct. 14, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.52	1.63	2.45	62	44
Red Bluff	.00	T	1.40	82	52
Sacramento	T	.01	.75	84	48
San Francisco	.00	.08	.71	82	52
San Jose	T	.17	.71	86	38
Fresno	.00	.33	.58	90	48
Independence	.00	2.52	.58	78	36
San Luis Obispo	.00	.98	.79	86	46
Los Angeles	.00	.03	.26	92	56
San Diego	.00	.10	.26	80	54

The Week.

In the matter of rain, the prophets, as prophets go, seem to be on our side. The "wet moon" was thankfully acknowledged last week. And now comes the Oregon weather prophet, S. V. Rehart, of Lakeview, who has made at least two years' good guessing, which is about the record for weather prophecy, and is therefore entitled to respect—especially as his line of futures is that which is particularly desired just at this moment. As will be remembered, Mr. Rehart's system of prediction is based upon the pendulum; so far as it swings one way in the summer, just so far it will swing the other way in the winter. If the summer is cool the winter will be warm and consequently dry, and if the summer is hot the winter will be cold—and wet; because storms are cold and carry water, either as rain or snow according to their ruling temperatures. We do not care so much for the reasoning (because it simply harks back to the dualism of the ancient philosophers) as we do for the bold declaration which springs from it. And there is certain a lot of comfort in that:

"Up to midsummer, indications pointed to another dry year, but from that time up to the present a change has taken place, indicating a successful precipitation period of two months or more. Some of the storms should be heavy, and, altogether, there should be more than a normal precipitation for the season.

"For the past thirty-nine years the successful precipitation period in winter has corresponded closely in length of time with the heat, or heated periods, of the preceding summer. With one exception, during thirty-nine years, the rain period began six months after the beginning of the heat period of the preceding summer.

"If the above rule holds good this year we may expect a deficiency of precipitation up to midwinter, probably to February 1, after which we may count upon abundant rainfall, continuing late in the winter months."

Now that Mr. Rehart has fixed up the last part of the winter in good shape, we will fix the first part for ourselves. Every winter which has had a very wet February and March has, according to our recollection, always had heavy rains before those months arrived. In short, a very wet spring is always a part of a very wet winter; therefore it is likely to rain abundantly from November to February, and—hunt up your umbrella without further delay!

The Wounds of California Agriculture.

The discussion in these columns of the desirability, or otherwise, of a protective tariff closes this week with a bang, and we choose, as a sort of benediction, the brief but impressive essay of Andrew Young, a California fruit grower of Missouri, which readers will find upon another page. In the intervals of absentee California fruit growing, Mr. Young diverts himself with the law and presumably with statesmanship, or with the poor relation thereof, called politics. Rather than offend the latter he is willing to quit California fruit growing; which is surely noble of him, for he proposes to relinquish a great joy. Our first thought was to welcome such a declaration of self-sacrifice and altruism to a place beside us upon the editorial driving-seat, but fearing that Mr. Young might be offended by the trivialties which we reserve for the editorial columns, we concluded to install him in the tonneau, where the really serious matter of this journal is carried.

But though we consider it no longer timely to either sing or to scold about the tariff, we must needs keep record of the facts of it. Below appears the imperial toga of California agriculture, showing the rents which the envious Eastern Cascas have made in it. Articles, like wines, which are not changed, do not appear.

Article.	Old Rate.	New Rate.
Olive oil in bottles	50c gal.	30c gal.
Other olive oil	40c gal.	20c gal.
Sugar—Until March 1, 1914	48.54%	48.54%
Until May, 1916	48.54%	36.25%
After May 1, 1916	48.54%	free
Wool (after December 1)	43.61%	free
Cattle and sheep	27.07%	free
Fresh beef, mutton and pork	25%	free
Horses and mules, under $200	32.93%	10%
Horses and mules, over $200	25%	10%
Swine	$1.50	free
Other live animals	20%	10%
Leather	5-15%	free
Barley	30c bu.	15c bu.
Oats	15c bu.	6c bu.
Rye	10c bu.	free
Rice, cleaned	2c lb.	1c lb.
Wheat	25c bu.	free
Wheat flour	25%	free
Butter and substitutes	6c lb.	2½c lb.
Cheese and substitutes	6c lb.	20%
Beans	45c bu.	25c bu.
Sugar beets	10%	5%
Vegetables (other)	40%	25%
Pickles and sauces	40%	25%
Eggs	5c doz.	free
Hay	$4.00 ton	$2.00 ton
Honey	20c gal.	10c gal.
Onions	40c bu.	20c bu.
Peas	25c bu.	15c bu.
Split peas	45c bu.	20c bu.
Nursery stock	24.12%	15%
Apples, peaches, pears	25c bu.	10c bu.
Preserved fruits	44.79%	20%
Jellies	35%	20%
Evaporated fruits	2c lb.	1c lb.
Currants, Greek	2c lb.	1½c lb.
Figs	2½c lb.	2c lb.
Prunes	2c lb.	1c lb.
Bottled olives	25c gal.	15c gal.
Raisins	2½c lb.	2c lb.
Lemons	64.85%	24.03%
Oranges	70%	40.08%
Grapefruit	38.45%	20%
Grapefruit from Cuba	51.32%	27.78%
Almonds shelled	6c lb.	4c lb.
Almonds, not shelled	4c lb.	3c lb.
Walnuts, shelled	5c lb.	4c lb.
Walnuts, not shelled	3c lb.	2c lb.
Condensed milk	2c lb.	free
Potatoes	25c bu.	free

The foregoing are the articles of agricultural connection produced in this State concerning which the more or less open door has been declared. We shall have to wait and watch a while to measure the injury which the reductions bring upon producers.

The California Land Show.

The California Land Show is in progress this week in this city, and the public evidently finds it all that the prospectuses promised in the way of instruction and entertainment. It is a thoroughly good idea to bring the products of the farm into the heart of a metropolis where the multitude can enjoy thought and sight of them. Great agricultural shows can never attain to the urban multitude except as they offer thrilling sensational features which people are usually better without. The "land shows" which are held in the cities are altogether different in methods and effects. They give the beautiful products of the farm an environment of scenic beauty; the air carries the perfume of the fruits and flowers; music and speech of the industrial achievements which constitute the wealth of the State, cheer and instruct when weariness comes to sight-seers. We have been greatly entertained by listening to the conversation of visitors to the land show this year, because it was so expressive of enjoyment and satisfaction. Evidently there is a very wholesome and promising recognition of the city's debt to the country and a very appreciative interest in rural affairs among urban people. In this matter it strikes us there has been a great change during the last few years, and it is a matter of much significance in the upbuilding of the rural industries of the State.

Secretary Lane Believes in Development.

In our issue of October 4 we gave an outline of Secretary Lane's talks on development while he was on this coast seeing for himself what is being done and what should be done. We are glad to see that he is following this up with some very definite recommendations which it will be good for Washington to hear and ponder. "I am convinced," he said, "that it will be necessary to extend the time in which the settlers on the reclamation projects now have to pay for their lands. Ten years—the time fixed by existing law—is too short a period for the average farmer to get fairly on his feet. After getting subsistence and paying annually the amounts required by the Government, he has not enough surplus property to develop and improve the farm. Personally I am in favor of extending the paying period to about twenty years, with a free period of four or five years, in which it would be necessary for the settlers to make no payments. In existing circumstances many of these men have to borrow money, and the banks exact an interest charge of 10 and 12 per cent. Of course, that makes the situation of many of them almost impossible." This is a very clear view and it is interesting to add that it is also a conclusion based upon the experience of the whole world in financing developments of lands which hold problems. Of course, it may seem irrational when one considers only the development of the best lands of this country, for that was relatively easy and quickly remunerative, but Uncle Sam has to do now with lands which require much time and money to bring to free production and those who do this work for him must receive consideration which the pioneers of the last century did not need. Liberality to the development of the left-over lands and the furnishing of capital for it at much less than commercial rates are indispensable.

That Crop-Moving Money.

Some wonder has been expressed that in the distribution of the fifty millions of crop-moving money, which the U. S. treasurer was authorized by Congress to place in the national banks which would qualify for it in designated parts of the country, only thirty millions have been called for

and California has called for none of it. This latter fact is accounted for by the fact that the bankers entitled to receive it in this State announced that there was no need of it: that there was money enough to meet all good short-term loans at commercial rates. This was undoubtedly true and it does not mean at all that California farming does not need more capital for development and improvement. It does, however, clearly show that the need of money for moving crops, "which is so freely talked about by financiers, is largely a bugbear, though a true issue, of course, to a certain extent. It is not money to move crops so much as money to make improvements which will yield more crops that is needed in the West, at least, and money which is sent out for a few months at commercial rates does not meet that need at all. It may serve a good purpose in financial centers, but that is a thing which we neither know nor care much about—except that possibly it may reduce the activity of the bug-bear aforesaid. By the time such money reaches the farmer it carries local interest rates, which Secretary Lane truly says, "makes the situation almost impossible." This will all be made clear enough, no doubt, when the proposed winter work of Congress on rural credits is taken up.

An Age of Promoters.

The way the promoters are seizing upon the crying needs of the country is a striking phenomenon of our recent development, but they do sometimes create propositions for which the public should receive some compensation. Take, for instance, the announcement of Miss Charlotte Smith, head of the Woman's Trade Board, that she has five hundred New England women and girls who are ready to go West to find husbands, and that she has asked James J. Hill, the Northern Pacific railroad magnate, if he would give the bunch free transportation. Miss Smith said: "I have letters from Minnesota asking for five hundred women to become wives. The men out there mean business, and the five hundred are the kind of women these farmers want. I can't send them by parcel post, so I went to Mr. Hill." Mr. Hill has made no decision. It is probably a matter requiring action by the Interstate Commerce Commission, as it transcends the boundary of a State. We are willing to use our full influence with that body if Miss Smith will also get aboard the train and do her share by jollying-up one of those lonesome farmers. As a promoter, she makes us weary.

Queries and Replies.

Resurrection in Cherries.

To the Editor: Please inform me why it it that cherry trees die and then sprout out again.—M., Jamestown.

Our observation is that cherries which die have a way of staying dead. We can only surmise that our correspondent's trees must have put on the semblance of death without the substance thereof and subsequently laid hold on life again. We have seen this done in several ways. We have seen trees which dropped their leaves in the summer reclothe themselves with blossoms and leaves in the autumn. The cause of this is dry soil which causes premature maturity, from which the tree may become active again because the fall of the evaporating surfaces is followed by an accumulation of sap in the tissues which forces the buds to bursting. This may or may not be accompanied by increase of soil moisture by the autumn rise or by early rainfall. We have also seen cherries die outright from lack of soil moisture, and this is usually indicated by drying and hanging. An exception to this case is sometimes seen in the form of sprouts from the roots, but usually when a tree hangs onto its dried leaves in the summer it is surely and permanently dead. The foregoing manifestations come in the late summer and early autumn.

Another semblance of dying in the cherry is the curling and drying of new leaves soon after starting in the spring, though sometimes manifested later—even into the early summer. This is due to root injury by standing water in the winter and the reappearance of life afterwards, that is in the late summer or autumn, indicates that the root injury was limited and the tree had strength enough to produce new root-hairs which kept parts of the tree from actually drying to death and subsequently pumped sap enough into such parts to force sprouting. This is manifested in the spring or early summer.

Non-Bearing Apricots and Olives.

To the Editor: Why do not apricot trees at Long Beach bear fruit, and why do only a few olives appear on a given tree in Upland while on other trees nearby the crop is good?—B., Ontario.

There are many kinds of apricots which are practically sterile. Out of twenty or thirty varieties which have been even propagated largely, four-fifths have been abandoned for lack of bearing. The probability is, unless some better reason can be assigned, that apricot trees in Long Beach or elsewhere that do not bear fruit are of these sterile varieties. There are three varieties which seem to bear wherever trees are planted, and they are the Newcastle, the Royal, and the Blenheim, and these varieties bear well, whether close to the ocean or remote from it, in interior valleys.

The same condition prevails to some extent with olives. Some varieties are exceedingly shy, while others, like the Mission, are rather regular. In the olive, however, the different conditions of moisture seem also to regulate the behavior of trees, for the olive tree will live and grow with conditions of moisture which do not seem to be adequate to its fruiting. One cannot answer such questions without having an opportunity to examine trees and environment, and even then the different behavior of trees of the same kind is sometimes baffling.

Horse-power.

To the Editor: Could a 6-horsepower motorcycle engine pull a centrifugal pump that requires a 6-horsepower stationary gasoline engine to run it? This is not a practical question, as I know a motorcycle engine has to be kept in motion to keep it cool. I have just been told that a horsepower is just the same on all kinds of engines, and that a 20-horsepower automobile, if harnessed for it, could do the same work as a 20-horsepower stationary engine. I would like to know if this is true.—G. N. S., Fresno.

Well, yes: whether it be a draft animal, or an engine, or a gale of wind, or a kicking burro, or a stick of dynamite, it is a theoretical horsepower if it can lift 33,000 pounds one foot high in one minute: actual horsepower, however, is whatever horse-power is really developed as proved by trial. Whether you can use a thing able to do this, under certain conditions, to operate under other conditions, depends upon the working requirements of the machine or agency and its environment. The tides of the ocean have more horsepower than all other earthly motors combined; but to cultivate a row of corn we would rather have a lame mule.

Getting Out Salt Grass.

To the Editor: How can I get salt grass out of my land so that it will stay out?—B. E., Volta.

The permanent removal of salt grass is usually dependent upon reducing the alkali in the soil, because if the alkali remains very favorable to salt grass it will probably be too strong for other crops. You might by free surface flooding drive down the alkali sufficiently to get something of a stand of alfalfa, or possibly the growth of some other crop, but the salt grass would reassert itself, for the irrigation of the alfalfa, by subsequent evaporation, would increase the strength of alkali near the surface. It all depends upon how strong the alkali is and to what point you can reduce it by cultivation and manuring, etc., unless you are ready to undertake thorough reclamation which comes through under drainage with surface application of fresh water to dissolve the alkali and carry it out through the under drainage. If you are not disposed to make the investment necessary to do this, you ought to be glad you have salt grass. You might have something a whole lot worse.

Fall Treatment of Johnson Grass.

To the Editor: Now that the fruit harvest is over there are some growers who are anxious to know what can be done to control Johnson grass at this time of the year.—Farmer, Sutter county.

If the dry weather should continue, the thing to do for Johnson grass is to plow deeply, harrow well and drag out as many Johnson grass roots as soon as possible with a horse rake, burning them in the windrows as soon as they dry sufficiently; or give the hogs and cows a chance to devour them. It is, of course, rather late to undertake this, because of the probable coming of the rains for which we are hoping. It should have been begun in August and continued through September, and then a good killing could have been made, and keeping down the grass by weed cutting under the surface next summer would have been much easier and more effective. Johnson grass roots turned up to the weather can be quickly killed by freezing, but our California valley temperatures seldom fall low enough to accomplish much in that direction.

Soil Blasting for Almonds.

To the Editor: I have 500 almond trees on almond root to plant this winter. My place is in Colusa county. I have been advised to use dynamite in opening ground for planting. Will you kindly give me your opinion on the matter.—B. G. C., Berkeley.

In planting almond trees on deep, well drained loams, which are best suited to the almond root, soil blasting is not always either necessary or desirable. Such land which has been used for grain, etc., for a number of years can usually have its indurations near the surface sufficiently overcome by deep plowing before planting. Soil blasting is very desirable for breaking up impenetrable clay strata or hardpan to admit moisture to the lower soil and permit the extension of the roots therein. Whether investment in blasting would be profitable or desirable depends upon the soil conditions existing in any particular piece of land.

Starting Young Prune Trees.

To the Editor: In the spring of 1912 I planted an orchard of one-year-old French prunes on Myrabolan root. When I set them out I cut them off about 2½ ft. from the ground. In the spring of 1913, when I pruned I left three or four main branches which have made a growth of four or five feet this summer. The question is, when I prune this fall, should I leave the main branches as they are, or should I cut them back again? I have been advised to do both, and would like to know which is the better way.—T. B. Eden Vale.

We should cut them back once more, leaving a little less than one-half of the last summer's growth and cutting to outside buds.

Fruit Stories in the Winters District.

[By Our Associate Editor.]

Citrus Opportunities Overlooked.

The citrus boom that hit the foothills of the Sacramento and San Joaquin valleys a couple of years ago and Tulare county quite a bit before that, coupled with the cold spell of last January, has left persons interested in oranges and lemons more interested than ever in finding locations where citrus fruits would thrive and be profitable, both north and south. Some places had hardly any injury, some quite a bit, but as a rule it is considered pretty necessary in Northern California to get all the oranges off the trees before Christmas and it is usually a rather optimistic person that considers lemons in the big valley an advisable crop. Winters is almost the oldest fruit district in California and anyway it has been long settled and the first settlers had home orchards around the house, yet Winters has barely thought of oranges commercially and there is only one seven acre grove that can be half called a commercial planting.

That seven acre grove by the same token shows two surprising things. One is a block of trees raised in that hot, dry climate without a drop of irrigation, though irrigation is given now, and it shows lemon trees that apparently never had the slightest trouble with cold weather in their life. Possibly the latter can be found in the interior in a few places, but it will be a wonderfully rare case where there was no protection from houses and surrounding vegetation.

This orchard is up where Putah creek enters the mountains and is sheltered by the hills. It is owned by Louis Sackett, whose father put out the trees 13 or 14 years ago. The land is rolling, with a slight slope as a rule toward the northeast toward Putah creek, which lies quite a distance below it. The soil is deep and inclined to be heavy. Apparently there is no subirrigation to speak of from higher levels and the trees reached nearly their present size from moisture conserved in place by clean culture.

The incentive to orange growing came through the success of a group of about 35 to 40 trees around the house planted 35 years ago by the original owner. They were planted close together and are tall, being pruned like oaks. Mr. Sackett, Sr., thought if they would do as well as they did it would pay to plant a whole orchard with them and as stated, the seven acres were grown for about 11 years with only the rainfall to depend on. The growth was, it is true, slow and after they were old enough to bear, bearing was irregular, sometimes satisfactory and sometimes not, but experience since then shows a surprisingly small need for irrigation.

Two years ago they were irrigated and did well. Last year they set a very small crop and Mr. Sackett was afraid to irrigate for fear the fruit would develop like a sponge, so put no water on at all and the oranges developed properly. This year they set a nice crop and were only irrigated twice, about the first of July and the first of September, very little, it can be seen, yet they look finely. Mr. Sackett is now putting in a concrete pipe irrigation system, pumping water from the creek for it.

Most of the grove is in oranges, though there are a few young lemon trees and some old lemons of the original planting. The latter have set a large amount of fruit and if the frost hurt them it is hard to see how. It did, however, cut back some citrus stock on the creek bottom. The lemons, on account of the hot, dry summer, mature early and are picked before the serious frosts would come, even if they would do injury, and are kept in boxes in the basement to cure and be sold in the spring. The oranges ripen at the same time like all interior oranges but appear to be very early. There appear to be no insect pests or diseases to give trouble. There are a number of old plantings of a few trees on various Winters ranches in less sheltered positions that show similar freedom from frost injury and a few ranchers are getting interested in citrus growing. The experience simply indicates the advisability of getting in a location where frost will be at a minimum, instead of out in the floor of the valley, where lots of Northern California orange groves are planted. Such immunity for a delicate tree like the lemon is unusual in the big valley, also the lack of irrigation, but moisture must come from somewhere.

The Black Mission Fig.

People in touch with the fig situation have been getting quite interested during the past few years in the possibilities of the Smyrna, while others advocate the planting of the White Adriatic. The Black Mission everywhere has its advocates, but in Winters it is looked upon as about the best thing possible. Probably nowhere else can so many fig orchards be found as in western Yolo county, especially old orchards. In the San Joaquin lots of fig borders are seen, but few blocks. Here blocks are common and borders uncommon. Being old orchards, Mission is the leading variety.

There are two crops of this per year. The first is a smaller crop though the fruit itself is larger, and is used mainly for shipping fresh. After the trees get large the picking is rather slow, though it is done by having some shears on the point of a pole with a can for the fig to drop into just below. Some fine prices are secured from fresh figs.

Those not sold fresh are dried, or dry themselves, and command a price a little less than that of the regular crop. The trouble in this connection is that the figs are attacked quite a bit by insects and birds. The second crop is not troubled in this way. Unlike other standard drying varieties the Mission does not sour from early rains.

Before packing the figs are dipped in hot water and covered to steam for a couple of hours to make them pliable. They are then packed in 20 to 40 pound boxes. They can leave the packing house for a cent more than the price to fruit grower. If the grower gets 3 cents to the packer the f.o.b. price is about 4 cents and the retailer can get them in boxes for five cents a pound, showing a very small loss between producer and the last middle man. They are delicious eaten out of hand or stewed and it is readily seen that there is a wonderful opportunity for increased consumption if the game is played right, for everybody who could get figs at ten cents a pound would fall over themselves to get more. The trouble is that the market has been utterly neglected, except with a few fancy brands, mostly of the Smyrna fig.

The Geraldson Fruit Co., of Winters, has specialized on the Black Mission, endeavoring to develop the consumption by putting them up in attractive cartons of about 9 ounces net weight. The company has had business difficulties, but the good work is to go on. The Winters Dried Fruit Co. handles a large amount of black figs in boxes, putting them up in attractive style, and has even a good retail trade, that is, several customers in parts of the country order a few boxes direct. Thus the future of the Black Mission is highly thought of in the district. The price to the producer in California has been away lower than it should be, but even at 2½ and 3 cents a pound there is lots of money in it for the grower, who needs do nothing but cultivate his soil and pick up the dried fruit.

Alfalfa in the Drying Yard.

One of the most regrettable features in the ordinary orchard where much dried fruit is grown is to see the drying yard lying bare and unproductive. P. T. Gannon of Winters, probably our oldest subscriber and an occasional contributer, gets good use of the yard and improves it too, on account of having a good pumping plant.

The yard is planted out to alfalfa, which is kept growing until it is time to get ready for the fruit. The alfalfa is permitted to use up most of the moisture before this time and a few days before drying starts the stock is turned on and the alfalfa eaten down smooth. As a result the ground is clean and level and there is no dust or dirt to get on the fruit. Merely as a drying yard it is an improvement. Then after the trays are taken off, the water is put on and growth begins all over again. The first week in October, for example, the second cutting after the drying was completed was in the cocks. This means a good deal of saving in the feed bill for the stock and gives a profitable use of a piece of land that in the ordinary orchard lays practically useless except at drying time.

DISLIKES A DUTY ON ORANGES.

To the Editor: I note that since the Editor has returned from the protection countries of Europe, his usual "protection" claim has started again in the columns of the Press.

I own some citrus interest in California, but I have never been so greedy and selfish as to ask the people of the East and the Central and Midwest to tax themselves to support me, and I do not believe the people of the great State of California desire that either. If I cannot raise fruit in California without a so-called "protection" I will quit.

During the Editor's absence in Europe, a very able letter was published in the columns of the Press by an old and long time fruit grower of California (I don't recall his name), showing the fallacy of this "protection" howl that the Press sets up. In another letter in the Press, of Septemper 27th ultimo, Mr. Herman Brown very thoroughly riddles your protective scream of all its sophistry.

The people are gradually awakening from their long time sleep to strike down the protection robbery. The people are the long time sufferers, but the "big interests" have been piling up their wealth at the expense of all of us.

The Press is a very interesting paper, and would subserve the fruit interest better and the California people generally by eliminating this twaddle from its columns. Albert Young.

Kansas City, Mo.

[There is not much use continuing the discussion now, for the thing is settled for a time, and Mr. Young's is the last piece of twaddle we expect to print on the subject until it comes to life again. See you later, Mr. Young.—Editor.]

A BANANA AS A PEACE EMBLEM.

John Barrett, director general of the Pan-American Union in a letter addressed to the Senate and House conference on the tariff bill protesting against the proposed duty on the fruit, portrayed the banana as a powerful civilizing influence.

"The building up of the banana business has done more than any other individual influence to bring about conditions of prosperity, sanitation, health and peace in those low lying coast lines of the Caribbean and Gulf of Mexico, which, previous to the banana era, were largely given up to wild jungles, malaria, shiftless people and haunts of incipient revolutions," said Barrett. "The dove of peace," it was said by one of the conferees who read Barrett's appeal, "hereafter should carry a banana in its beak."

WHITE ANTS AND FRUIT TREES.

Once in a while a grower, especially in southern California may find some very interesting sculpturing on the trunk or large branches of an orange or other fruit tree. Fortunately the trouble is not widespread, but a note by Mr. Froggat, the New South Wales entomologist, is interesting to bear in mind.

White ants are difficult things to deal with in an orchard, as poison that will kill them will also affect living plants. When planting, care should be taken that all damaged roots are cut clean away. As regards deep planting, if the scar of

the graft is covered with the soil, we often find that white ants attack this spot and gain a foothold on the young tree. Thus deep planting is a mistake if it brings the scar underground.

Care should be taken to remove all stumps and bits of dead wood from ground intended for an orchard, as these tend to harbor the pests. Where the ground is kept well worked around the trees, white ants seldom do any damage. When they are found about the roots of a fruit tree a few pounds of Kainit dug in will drive them away, and also acts as a manure.

Probably nitrate of soda would act in the same way, but one has to be careful about getting too much of either salt in contact with tree roots.

BURNT BARK, SAP-SUCKER AND FROZEN LEMONS.

To the Editor: I am sending you a small piece of diseased bark I took off one of my walnut trees. How can I restore the trees to their healthful bark? I have about fifty walnut trees aged about 13 or 14 years, healthy appearing. Situated three miles from ocean on sandy soil and had a very fair crop of nuts this season. In gathering the nuts I discovered that many of the trees had the bark loose from the ground up from five to seven inches and as wide around the tree as high, more or less. And it seems that if it were not stopped it would surely kill the trees.

I also noticed that some trees had a row of small holes from half to one inch apart and the bark was commencing to peel outward from the tiny holes all about the same distance from the soil as above mentioned.

On our home place in town I have 50 five years from bud lemon trees that were frozen to the ground last winter. Every one has sent out shoots, one of which I retained and they are now some five to six feet high. When shall I prune off the top to let them form branches? Many of them are now putting out branches.— R. T., Arroyo Grande.

The bark pieces you sent seem to indicate sun burning. If you find that they are generally on the south and southwest sides of the tree, there would be no question but that is the case. Nothing can be done for the restoration of such injury. It can be kept from spreading farther by whitewashing to reflect the sun's heat. The spot will be slowly covered by the growth of new bark from the sides.

The small holes which you mention were made by the sap-sucker, a California woodpecker, which makes these holes for his own purposes and opens the bark for the intrusion of decay. All such injuries should be covered by using a Bordeaux whitewash, which has fungicidal properties.

You should cut back the lemon trees at once, down to the point where you find good growth emerging and paint over the cut with lead and oil paint sparingly used, so as not to run down the bark.

A CORRECTION.

In the issue of October 4 in an article on the buying of fertilizers a little figuring was done on a typical fertilizer. An examination of this will show that in the figuring the content of 2½ per cent nitrogen from nitrate of soda was omitted, the value of this being approximately $7.70 per ton. While the value of the elements entering into the stated calculation was $23.50 or so, as stated, it can be seen that this would make the value of the fertilizer as sold about $31.70, that is, using the basis of value given by the Fertilizer Control.

CALIFORNIA TIMBER BUSINESS.

The cut of timber on the National Forests in California for the fiscal year 1913 was 52,419,000 feet B. M., an increase of 17% over the cut for 1912; and the amount sold has increased 875%, or is nearly ten times that for 1912.

The total sales amounted to 1,064,804,000 feet B. M., an average stumpage rate of $2.18 per M. The average rate received for the timber cut was $2.06, and 607 sales were made, an increase of 31 over the year 1912.

Planning an Irrigation District.

[By Our Associate Editor]

Whether we have the two dry years to thank for it or not, irrigation districts in prospect are springing up all over California, which is one of the best things possible for both the State and the people in the district.

The newest one that is just getting on its feet is the Tracy Irrigation District, though it has not yet been given its official name, and it is partly to illustrate the methods of getting a district started and partly to tell what great results can be expected from the expenditure of a small amount of money that the account of the situation is given.

The district now forming surrounds the town of Tracy in southwestern San Joaquin county. It is at the upper end of the west side of the San Joaquin valley, just where the edge of the valley starts to circle around the hills to the north, bending westward out along the delta of the San Joaquin and Sacramento rivers to the bays north of San Francisco.

All of this West Side has been noted for its rich deep soil. The soil comes from the Coast Range, not from the Sierras, as does the East Side soil, and is of more mixed composition than the granitic soils on the opposite side of the river. Likewise it is heavier, ranging from a medum to a heavy loam. The general slope of the land from hills to river is much greater than the slope on the other side of the valley, though approximately level to the untrained eye. This slope is just about right for irrigation.

Natural Value.—The natural value of the land is limited greatly by lack of moisture, for the Coast Range mountains close at hand to the west cut off much of the rain that would otherwise fall. When there is sufficient rain, the nature and strength of the soil gives heavy crops of grain or hay, for this soil is much stronger and more enduring than sandy soil. Still when drouth comes to the State, the West Side gets hit hard and the last two years have shown conclusively the need of irrigation.

Irrigation, or just the plan of the irrigation district is no new story. Not many miles below, Patterson has one of the model irrigation systems of California, taking water from the river in pumps by successive lifts and leading in by laterals over the land.

Farther south only the rather small amount of travel by the general public over the West Side Southern Pacific line prevents Newman, Gustine, Los Banos and neighboring districts from being far famed for the wonderful dairying done.

The soil and the lay of the land is just the same around Tracy, but the climate is a little milder on account of the nearness to the opening of the valley and there is somewhat more rainfall. With water it would certainly be a wonderful alfalfa country and great for deciduous fruits, including walnuts.

The District Plan.—The position for the formation of a district under the Wright law is before the supervisors, so there is lots of room for change by taking in more territory and in various details. The original idea was to have 60,000 odd acres in the district, but the plan upon which the officials, or rather legal work has been done in petitioning the supervisors is for only 20,000 acres, though it is easy under the Wright law for adjoining property owners to come in. However, the essential points are the same whatever the size and the cost per acre will not differ much whatever area is irrigated, though the more the better. Surprising as it may seem, the total construction cost of a system which will supply all the water needed to the land will cost only from $23 to $25 per acre.

The water is to come from the San Joaquin river several miles west, about six miles from Bryon and three from Bethany. It will be pumped up 120 and 160 feet to contour line canals and thence distributed by gravity over 20,000 acres of soil of the nature told of. Practically all of this is deep, rich and uniform. Except as it could be farmed by rainfall, it has been lying idle, though with normal seasons a fine grain crop could be taken off once in two years. All the land in the district as planned is above the 40 foot contour, as that lower down is about all either bottom land that can be farmed without irrigation or is irrigated by private pumping plants.

From this point of pumping enough water can be taken to irrigate 600,000 acres, as the supply is inexhaustible. In one way it is not river water at all, at least it is tide water, for there is a tide of three and four feet there and the water itself may come from either the Sacramento or San Joaquin rivers and is backed up in summer, the arm of the San Joaquin from which it is taken being sometimes dry in spots above.

Pumps and Canals.—From this point, which is only a few hundred yards from the Southern Pacific main line, the land slopes up evenly and the starting point of the highest canal, 160 feet up, is only two miles from the source of supply. The water may be taken to the 120 foot canal in four or five successive lifts, or forced up in steel pipes by one operation. That is only a matter of detail. Naturally, only the amount of water needed for the higher canal will be pumped up there.

The amount of water raised, size of pumps, canals, etc., will depend on the size of the district, but the cost, with laterals to the highest point every 160 acres will be, as stated, only about $25 per acre. There is just about as little extra grading required on account of uneven ground as could be imagined and no engineering difficulties or expense whatever.

The pumping will probably be done by electricity, and if the price is not right the district can generate its own power at the least possble cost, as two pipe lines 300 yards distant from the pumping plant ca nsupply crude oil.

Acre Expense.—The cost of raising the water will be small and the cost of maintenance and operation down to a minimum on account of the nice way the land lays. It is figured that the total annual cost of irrigation, including interest on bonds, will be only $3.00 to $3.50 per acre. That would be a very small cost for even the operation of a system already constructed and paid for, a whole lot less than the cost of supplying water from private well and pumping system. The water will also be available as early in the spring or as late in the fall as the directors think best, which is not the case with most irrigation districts that have only a gravity system with water taken from streams with small flow in late summer or fall.

The bonds under the Wright law bear six per cent interest and run for 20 and 30 years. Thus, though the cost of installng the system may be $25 or even over, only the interest of this will have to be paid up to 20 years, after which the bonds are paid off in part every year for ten years, when there is no more interest to pay and the system is the absolute property of the district.

Now with the best of seasons there is a crop of grain only once in two years and travelers passing through do not think much of California soil fertility. Planted to alfalfa ten tons per acre should readily be secured on that soil and with that amount of water in such uniform supply at cost of harvesting plus very cheap labor expense for irrigation, plus $3.00 or so per year. If other crops are raised, as they will be, the financial standing is the same in all essentials. Or by irrigation a land owner could for $3.00 raise more grain and hay every year than he does now in two years and have the summer to grow beans, corn or some summer crop.

In a year like this a good farmer could clear enough to equal present land values, plus cost of the system complete, plus cost of operation. This is not imagination, as these results are duplicated with other irrigation systems. The petition is before the supervisors for the calling of an election, everything is moving according to schedule to go on with the development and there will be another big slice of California to justify California's reputation throughout the country. Success be with them and all others who are preparing to take water from our rivers and put it on the land where it belongs

Direct Trade in Great Britain.

John Bennett, an esteemed subscriber in the Sebastopol district, sends us this clipping from the London Daily Mail:

The meeting of the International Co-operative Congress at Glasgow on Tuesday was made noticeable by a speech delivered by Mr. Cheney, representing the Board of Agriculture. He concluded a discussion on a very original paper read by Mr. Kaufmann, one of the directors of the Central Union of German Distributing Societies, who had shown what great benefits followed the system of linking up the country societies which produce and the urban societies which buy and distribute co-operatively. Mr. Cheney said:

"I am authorized to say that Mr. Runciman agrees generally with the view that great good might result from a working arrangement between rural and urban co-operative societies—that is, between organized producers and organized consumers. And I am confident that he would give very sympathetic consideration to any reasoned scheme that might be put before him and which it would be possible for him to assist."

The importance of this statement lies in the fact that definite arrangements for carrying out this scheme are in preparation.

[The Mr. Runciman alluded to is the British Minister of Agriculture—so the announcement comes straight from the existing British government. The announcement is simply an affirmation of what is not only now going on, but has proceeded a good distance. It has, however, less significance here than elsewhere, because no amount of direct trade here will help our producers much, as our great surplus products must go to distant purchasers. In Great Britain, where a hungry consumer has his eye upon everything eatable which can be grown, the situation favors direct trade.—EDITOR.]

The affairs of the Nevada Sugar Co. have been arranged so that work can be started soon on the crop of 1913.

Miller & Lux put out something over 40 acres to rice near Los Banos this year and got an excellent crop. Between Delano and Tulare lake one farmer with a lot of heavy alkali soil put three-fourths of an acre to rice as an experiment and harvested a large crop.

PURE ANIMAL MATTER AMMONIATES

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FOR CALIFORNIA SOILS

GOLD BEAR FERTILIZERS

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THEY NEED TO
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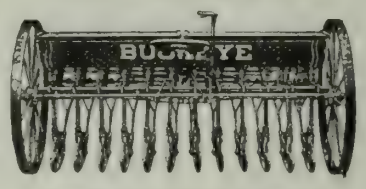

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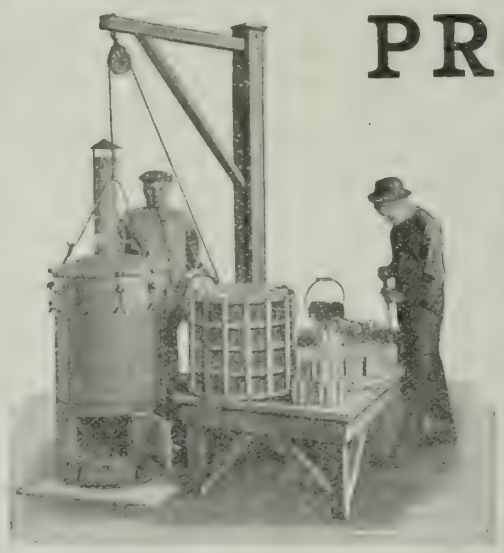

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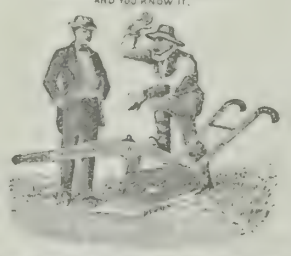

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Paradise Valley, Nevada.

To the Editor: Paradise valley lies almost north of Winnemucca, in Humboldt county, Nevada. From the appearance of the country along the railroad in this section, it wouldn't seem possible to find a rich valley containing over 400 square miles and within twelve miles of the railroad.

Owing to the scarcity of running water, only about one-fourth of the valley is cultivated. The other three-fourths, a great percentage of which is just as good land as one will find anywhere, is unpatented land.

From the fact that the valley is surrounded on three sides by a high range of mountains, it would seem that one could get an abundance of water by putting down wells. A number of farmers have taken up homesteads in the valley, and, owing to lack of capital, have not gone down over seventy feet; but at that depth, and after two years of very light snowfall, found quite a stream of water. They told us that they were satisfied that in ordinary seasons, by going down to a depth of 125 or 150 feet, an abundance of water could be had for pumping.

In Grass valley, just west of Winnemucca, a number of wells have been put down and a fine stream of water has been tapped. Guyam & Johnson have a well 125 feet deep, and, with an 8-inch vertical centrifugal pump and a 25-hp. engine, are lifting 850 gallons per minute. Their pit is down 60 feet and they are lifting water 10 feet. They told us that even this year they could not lower the stream running the pump 24 hours, and that in ordinary years they were satisfied that water would come nearly to the top of the well.

As this valley drains the same range of mountains that the Paradise valley does, we were pretty well satisfied that the same results could be had in Paradise valley.

That section of Paradise valley that is being irrigated from surface water that comes down some of the canyons produces fine crops of grain, alfalfa, timothy, red top, potatoes, and most varieties of the hardier winter garden truck.

In the sheltered sections of the valley, fine crops of apples, prunes, plums, peaches, blackberries, strawberries, currants, and in fact almost any variety of fruit, excepting citrus, that one would care to grow. This seemed very unusual to us when we took into consideration that the average elevation of the valley was about 4500 feet. We were told that the valley hadn't had a crop failure in thirty years.

As the canyons afford splendid summer range, the leading industry is beef stock and sheep raising. They are run on the ranges until the snow begins to fall and then are brought in and fed through the winter.

That this has proved a profitable way of feeding the alfalfa and timothy that is raised in the valley can be shown by the fact that there is not a mortgaged ranch in the valley. Some of the largest land-holders are rated at $150,000 and $200,000.

As the unirrigated land can be taken up as desert land, a man is entitled to a homestead on 320 acres. It costs $1.25 an acre to prove up on it; 25c per acre down, and 25c per acre per year afterward.

We are not quite certain, but we think that four years is allowed to prove in. With the price of land increasing all over the United States, it seemed to us that this section afforded one of the best opportunities to a man with a medium amount of capital to get a good ranch that we had yet seen. Of course, it would not be all smooth sailing; but to a man who was willing to hustle, it looked like a pretty safe chance.

D. L. SCHRADER.

The Briggs tract, of 1,900 acres, north of Winters, has been sold and will be subdivided and placed on the market.

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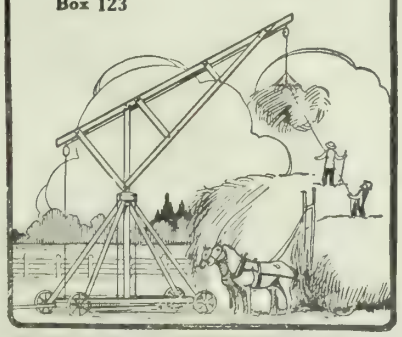

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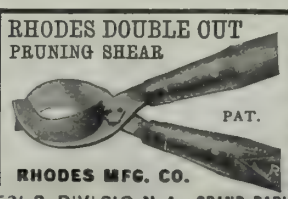

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Cost of Irrigating Equipment.

To the Editor: I have a bored well cased, seven inches in diameter, 100 ft. deep; abundant supply. Will your engineering department inform me what is the best method of obtaining the greatest supply? What horse power engine and what sort of pump, also probable cost?—W. L. B. H., Lake County.

ANSWER BY HOLTER AND RODGERS OF SAN FRANCISCO.

As Mr. Hill neglected to state whether he wished to use his well for domestic or irrigation purposes it is rather hard to give a satisfactory answer. But we shall discuss the extremes in each case and Mr. Hill may approximate between for his particular needs.

After knowing for what purpose the water is to be used the intending water user should know the distance below the surface at which the water stands in the well, irrespective of depth, when the water is not being pumped. It is then necessary to know the amount of water that is needed if for domestic purposes or the number of acres of land if for irrigation. In either case it is simply a matter of size of pump and size of engine which is controlled by the amount of money the owner wishes to invest.

We shall first discuss the problem of domestic supply. This can be accomplished by a lift pump at the rate of from 15 to 70 gallons a minute. The cost here is controlled by the number of feet the water has to be raised and the number of gallons per minute required.

If a life pump several parts must be considered. They are:—a cylinder in the well, a number of feet of pipe from this cylinder to the point of discharge, a pumping head either geared or belted to an engine or motor, and a gas-engine or motor. For a supply of 15 gallons a minute and a lift of 100 feet the cost would be as follows:

Cylinder	$ 9 to $14
100 feet of pipe at 12c	12
Pumping head	14 to 25
1½ H. P. gas engine	75
Approximate cost	$125.00

For a supply of 70 gallons a minute and a lift of 100 feet:

Cylinder	$ 20
100 ft. of pipe at 20c	20
Pumping head	60
5 H. P. gas engine	150 to $350
or 5 H. P. motor	68.10
Approximate cost	$250 to $450

(Running cost probably more)

Gasoline used would be about ¼ gallon per H. P. per hour.

For irrigation purposes one is again controlled by the amount of water needed and the amount of money to be invested. The number of acres to be irrigated, the local rainfall and its distribution, and the number of feet the water is to be lifted all affect the outlay. A centrifugal pump would probably be chosen in this case. The cost varies with the quantity of water required and the distance it is to be lifted. Doubling the lift or quantity of water handled also doubles the power required and the cost rises in proportion.

When using a centrifugal pump it is necessary to dig a pit to the water surface in the well as it is not advisable to suck water over a suction-lift of from 20 to 25 feet to the pump. The price of the digging varies with the size and depth of the pit from $1.00 per foot up. The water level controls the depth of pit. We shall now take two possible lifts and figure on a discharge of 200 to 225 gallons a minute which is sufficient to cover one acre six inches deep in a twelve hour run, not allowing for loss by seepage.

Based on a pump efficiency of fifty per cent with a lift of 30 ft. a discharge of 200 gallons a minute may be obtained with 3 H. P. while with a lift of 100 ft., 10 H. P. will be necessary to discharge the same amount of water. It is simply a question of power, lift and quantity required. Doubling the lift or doubling the quantity doubles the power needed. With the 30 ft. lift one would use a No. 3 horizontal centrifugal pump which pumps about 225 gallons per minute and costs from $100 to $150. A 5 H. P. gas engine or motor would be used with this lift and size of pump. The engine varies in price from $200 to $350, but the initial cost is a small item compared with economy in operation as time goes on. There are engines on the market costing $350 which consume only ½ gallon of stove-distillate an hour at the rate of less than 5c a gallon. This would allow a run of twelve hours for 30c. Gasoline at 15c a gallon would bring it up to 90c. A motor of the same H. P. would cost about $70 and use about 4 KWH of power an hour. At a power-rate of 3c a KWH a twelve hour run would cost $1.44.

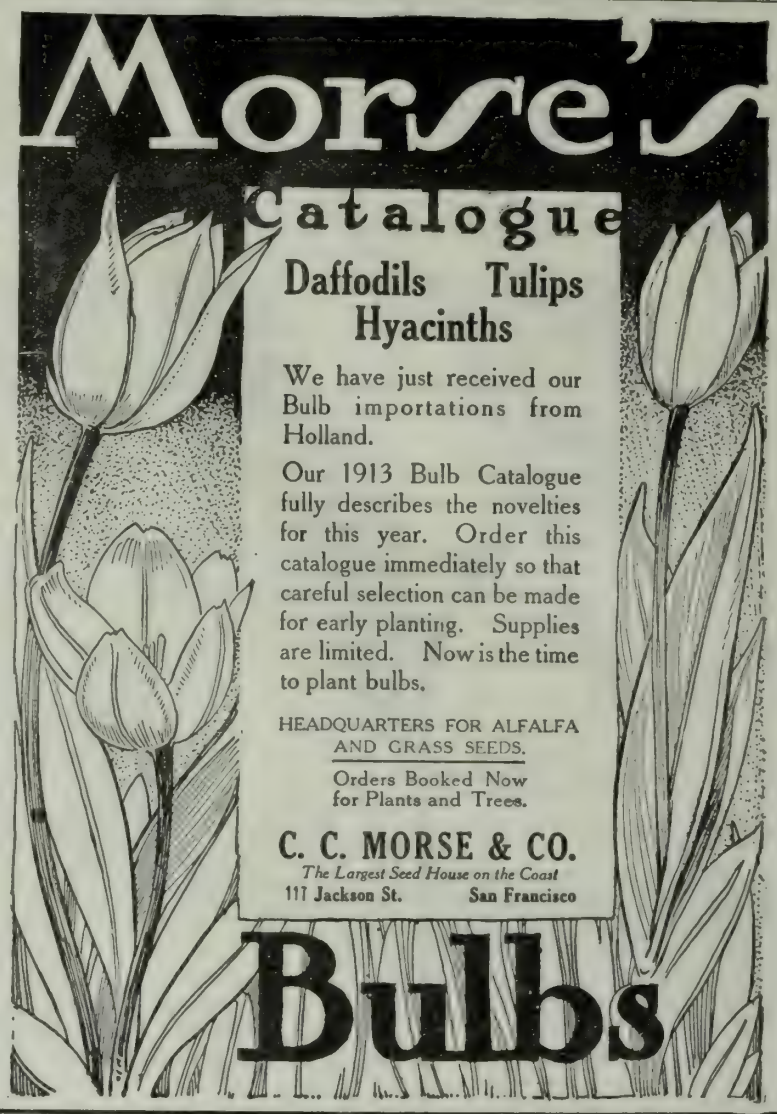
In the case of a 100 ft. life one would prefer a 15 H. P. gas engine or motor and a No. 3 vertical centrifugal pump, two stage. The engine would cost up to $640 and would use 2 gallons of stove-distillate per hour at 5c. Thus a twelve hour run would cost $1.20. A motor of the same size would cost $190 and would use 11 KWH an hour. At an average of 2½ a KWH a twelve hour run would cost $3.30. Though the motor costs a great deal less in the beginning one should study the local power-rate-schedule and figure on the cost of operation as time goes on.

The approximate costs of the two lifts are as follows:

30 FEET LIFT.			
Pump	$100		$100
Engine	350	Motor	70
Pipe	15		15
	$465		$185

100 FEET LIFT.			
Pump	$330		$330
Engine	640	Motor	190
Pipe	50		50
	$1,020		$570

So we are impressed with the fact that the lift and equipment chosen have a great deal to do with the installation to say nothing of the cost of maintenance and operation.



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Helping the Farmers to Co-operate.

To the Editor: I was intensely interested in the article in your columns on "Co-operation in Europe." I notice with pleasure that the theme has been taken up by F. D. Philips, of Oakland.

I believe Mr. Philips is an authority on the subject of financial mutual co-operation, and I should be pleased to know more about this beneficial way of helping the man of small or moderate means with which Mr. Philips, judging from the tone of his letter, is obviously connected. Coming from near the home of the Contract Plan (Liverpool, England), I naturally know something of the benefit which has been derived by farmers and others from this now old method.

I agree with Mr. Philips that it seems strange that there is no organization in California operating on this plan, which is very common in Europe and the Eastern States of America. Of course, the average man is rather skeptical when anything—money especially—is offered at a price far below the usual. But it is easily explained. If, for instance, a hundred men assemble and put a certain sum each into a fund, that money, which it has cost them nothing to accumulate, can naturally be loaned out more cheaply than if 4%—the bank interest here—has been paid to get it. If a bank pay 4%, and lend it at 7%, the above-mentioned imaginary assembly can afford to lend it to its various members at 3%.

This is the secret of the Contract Lending plan referred to by Mr. Philips. Mr. Philips will agree with me when I say that this is the fundamental principle of financial mutual co-operation. I sincerely hope Mr. Philips will continue his article in your, as he truly calls them, valuable columns. OSWALD BRYAN-TURNER.

2125 Cedar Street, Berkeley.

[To be perfectly frank, we are not particularly interested in the operations of concerns organized by others than farmers to help the poor farmers out of their troubles. But some readers may reply: "Is that not exactly what you are trying to do yourself"; and we answer: "Very well; if we fall by our own standard, it does not give us any less respect for the standard."

The fact is that farmers ought to do these things for themselves. Men who know each other and have confidence in each other should organize and conduct their own affairs on a true mutuality basis. We do not care to lead them into savings and loan concerns which others are promoting for them and counting upon securing profit from such operations for themselves. These may be very good concerns and may be worth all that they count upon getting, but they are not in the class of things we are now most interested in, viz.: things which farmers can and ought to do for themselves.

The word "co-operative" is coming to be applied to things which do not co-operate at all. Any man who wants to farm a bunch of farmers for his own advantage is apt to placard his concern as "co-operative" this or that. Co-operation is a rare bird, but "co-operative" may be a stool-pigeon.—EDITOR.]

HONORS FOR THE WATER-WITCH.

The divining rod of willow, or hazelwood, which is used for locating water, minerals and treasures, had its first scientific consideration in Germany on September 20, when the first congress of the German society organized for the purpose of clearing up the question of the scientific value of the divining rod met at Halle. Although the entire divining-rod matter is generally considered as being connected more or less with fraud and superstition, many scholars and learned men, geologists, mineralogists, and miners were present at the congress.

A staggering array of statistics was produced which tended to show that the divining-rod question has a scientific value and justifies scientific defense. It was said that, among others, the Kaiser is a firm believer in the value of the divining rod for locating water.

It was said that at the time the city engineer at Kiel harbor was unable to find a water supply for the city, City Councillor Uslar, who had learned how to manipulate a willow twig in Africa, was sent for at the request of the Kaiser, and he found an inexhaustible supply.

An affidavit was laid before the congress from engineers of the Munich municipal water department, in which it was affirmed that after they had tried in vain to find a subterranean leak in a big pipe line which made it impossible to keep up the pressure, it was decided to send for a divining rod expert before resorting to the extreme measure of tearing up the line to find the leak. A divining rod was procured, and it quickly indicated the spot which proved to be where the leak was situated.

Before the assembling of the congress, several members decided to make some practical tests with a divining rod, and in the presence of geologists and mineralogists, Scharf, a mine inspector, with a hazel stick indicated a spot where water would be found in a large orchard where repeated borings had failed to strike water. Borings were made at the spot indicated by Scharf with his divinig rod, and a plentiful supply of water was found.

[This is manifestly a popular account which knights of the divining rod are entitled to use in their business. On the other hand, doubters may allege that it is not such a carefully considered report of the affair as German scientists will no doubt publish later.—EDITOR.]

COST OF SMALL RESERVOIRS.

To the Editor: Can you give the construction, and some data on the cost of a reservoir for an irrigation pumping plant, with a capacity of say 200,000 or more gallons. The conditions are moderately level valley land, clay loam underlaid with clay or adabeat to a depth of four feet. Wells can be made to supply two or three hundred gallons per minute during continuous service. An earthen work well puddled and lined with crude petroleum, or cement suggest themselves.—SUBSCRIBER, Oakland.

We have no such data. Evidently the cost will depend upon the adjustment of several variable factors. Cost of labor and materials, method of excavating, etc. Perhaps some reader will kindly send us account of a small reservoir which he has constructed with simple implements. Such record of experience will be instructive to others.

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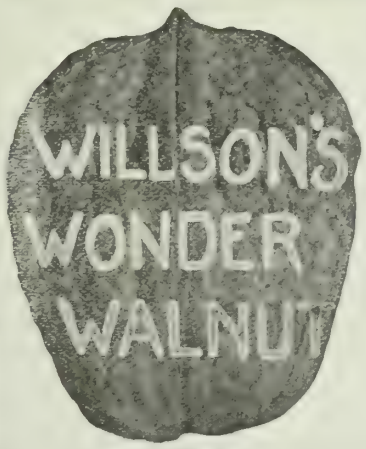

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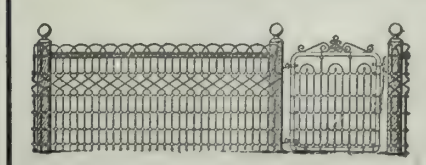

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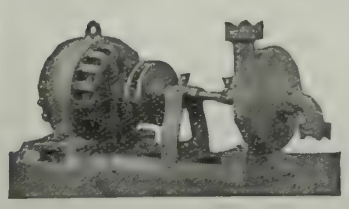

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Mention Rural Press.

AGRICULTURAL REVIEW.

With the Fruit Men.

The shipments of deciduous fruits East, after exceeding those of 1912 all season, are now behind by a small margin, as last season's shipments began late and continued very late, or up to December 5. Shipping this year will stop sooner. The total shipments this year will amount to about 12,000 cars, not including apples, which is more than 1,000 cars behind 1912. Peach shipments are far in excess of those of 1912, but shipments of other varieties were less plentiful. The value of the fruit shipped this year will approximate $16,800,000.

Selma fruit growers have voted to organize a branch of the California Cured Fruit Exchange.

Reports of deciduous fruit trees blossoming come from all sections. The reason is, probably, that the trees were partly defoliated by the red spider and, in putting out new leaves, sent out blossoms also. The event is regrettable, not a thing to feel proud of, and in addition may seriously diminish the crop of 1914.

Commissioner Galloway of Sonoma, in his monthly report, states that the prune crop was short, as it followed two full crops, but that prices of $175 per ton have been secured in some cases for French prunes and $265 for Imperials. A larger proportion than usual is being packed in the county.

The prune crop for Ukiah and vicinity was 200 tons this year, against 700 tons last year.

Shipments from Vacaville have closed for the year with 733 cars against 762 in 1912.

Pomegranate shipments from Tulare county have begun, and good prices have been secured. The demand for this fruit is steadily increasing, and pomegranate growing every year is becoming more profitable.

The big record in cling peaches from Sutter county was made this year by Richard Walton, of Bogue station, who from 11 acres of Phillips clings harvested at the rate of 13 tons per acre, which sold at $32.50 per ton.

It appears unlikely that the California Associated Raisin Co. will handle dried peaches in any quantity, and Fresno county peach men may go ahead in the formation of a large peach marketing company. The proposed company has 852 subscriptions for 6,899 shares of stock.

Some wonderful success has been secured near Corning by olive growers who have planted alfalfa in their orchards and irrigated same.

Commissioner B. V. Sharp, of Kings county, in his monthly report, states that orchards and vineyards show remarkable vigor, considering heat and lack of moisture. He advocates fewer automobiles in some instances and more wells.

A report on the walnut crop in Orange county states that the sizes will run quite a bit smaller than usual this year and that there will be rather more culls than usual. The nuts will also be harder to hull. The main cause of this is aphis and consequential troubles, also the hot spell of September 17. Blight was less harmful than usual.

Reports from Citrus Districts.

G. Harold Powell, manager of the California Fruit Growers' Exchange, is taking up with the Weather Bureau the proposition of increasing the service of the latter to citrus growers in giving more detailed and prompter service in forecasts of weather conditions, especially frosts.

The Citrus Fruit Products Co., of Lodi, which was organized to manufacture products from citrus culls, will begin work for the season early in November.

Commissioner Weinland, after inspection of San Diego county groves, states in his monthly report that both oranges and lemons will make a good crop.

Oranges in Tulare county will be smaller and of better sizes than last year, and shipping will be delayed more than usual to permit color developing better.

Dr. Herbert J. Webber, head of the School of Tropical Horticulture at Riverside, is working on new orange varieties for California.

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Orange shipments to Australia have begun from Butte county. The crop for the county will be small, probably 165 cars. The olive yield will be normal.

Lindsay shippers expect to send out 2,000 cars this season. An estimate from there for northern California gives Tulare county 4,300 cars, Butte county 150 cars, and Sacramento and other counties 200 cars. Folsom, Sacramento county, hopes to ship the first cars for the year for domestic markets. Some may go this week.

The Pomona Fruit Growers' Exchange sent out 430 cars of fruit this year, or a little less than half of a normal year's shipment. The last lot of fruit was packed the first week in October.

Watsonville Apple Annual.

In spite of a short apple crop, Watsonville held last week a most successful apple show. The feature exhibits and the entertainment features were both very attractive, and the attendance broke all previous records.

There were no carload exhibits this year. Experience in past years has taught the packers and growers that these exhibits are too costly. A week's exposure in the show tent greatly decreases the shipping value of a carload of apples. Fifty-box lots were the maximum exhibits this year.

The smaller quantity of apples shown was, however, more than made up by the greater quality. Competition was very keen and scoring high as compared with other years. Several perfect scores were made. The perfect score given in an exhibit of 25 boxes of Bellefleurs was notable as being the first score ever made at a show in this variety.

The judges were unanimous and emphatic in their praise of the high quality of the exhibits.

There can be no doubt that the Apple Show as an institution is doing much to improve the standard of the pack in this great apple growing and shipping section.

Vineyard Notes.

A circular sent out by James Madison, manager of the California Associated Raisin Co., states that the crop of the State will be approximately 70,000 tons, and little if any more. He claims that the company will be able to clean up both the 1913 crop and the holdover from 1912, which amounts to only about 17,500 tons. The company has offered 4 cents for Muscats not already contracted for, in this way giving an indication of what growers under contract can expect for their raisins. Judged by prices of former years, the increased value of the raisin crop will be sufficient to pay the capital stock of the organization. The company requires a good lot of funds to carry on the business of marketing the whole raisin crop and has offered growers 7% on money borrowed. About $100,000 a day is being paid out.

Leo Escher, of Escondido, San Diego county, harvested enough Isabella grapes from one vine to make nine quarts of grape juice, 14 quarts of jam, and 24 glasses of jelly.

The Oakland Colony vineyard, of 500 acres, one of the old vineyards of the Visalia district, is to be sold either as a whole or in 40-acre tracts.

General Agriculture.

Celery shipping has begun from the Sacramento river districts and will continue until late in January or into February. About 1000 acres have been planted in the delta region.

The first carload of southern California tobacco ever shipped East was raised near Sherman, Los Angeles county, and Yorba, Orange county. The crop was of Turkish tobacco.

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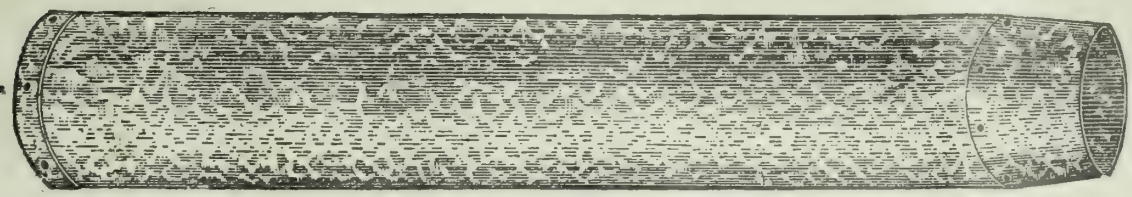

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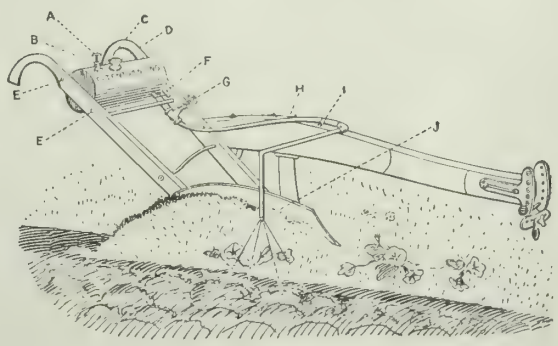

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Big Alfalfa Yields and How to Get Them.

(By the Associate Editor.)

Most of the big yields of alfalfa are estimates, possibly with the estimators feeling a little optimistic over crops that are more than normal. The reason that one can be sure of these yields off a nine acre patch owned by Andrew Veach, Manteca, is that he has some scales at the side of the road at one end of the alfalfa field and every load of hay that comes off goes over those scales and is weighed up. The reason for this is that the alfalfa is all sold, not fed to horses or dairy cows.

In 1912 there was alfalfa cut from this field at the rate of 12½ tons to the acre. This year the worms are much worse than usual and the cuttings are not so good as they would be if the worms were scarce, but the record of the first four will show how things are going. The dates given are for time of payment, not cutting or selling, so the time of cutting can only be guessed at. They were: April 28, 22 tons; May 13, 22 tons, 1,545 pounds; June 19, 17 tons, 40 pounds; July 20, 16 tons. The weighing of the August cutting was made by hired help and payment had not been made at time this record was given, so there were no figures for it, but a little addition will show that more than 10 tons were secured from four cuttings and two full cuttings left to come. Last year there was also a fall growth that was sold to a dairyman. It was not enough to make a full cutting by a great deal, but figured in the income nevertheless.

There were just 27 days from cutting to cutting from June to August this year, which shows how that land will produce.

In the Hen Yard.—At the side of the field going up a wire fence at the chicken yard was alfalfa not cut. The highest plant was 6 feet 8 inches from root to tip.

Inside the chicken yard the alfalfa is growing thick and is vastly appreciated by the chickens. Only about 50 are raised each year and these are kept in another yard and alternate lots turned in at different times. It saves a lot on the feed bill and is fine for the chickens. It would not be so fine, though, if it was not thoroughly watered to keep the growth green and fresh. It is cut with a scythe once in a while, three times already this year, up to the middle of September, to keep it from getting woody and the hay fed to the family cow.

Incidentally it can be remarked that the breed of hens raised is different each year so that the old hens can be killed without taking any young hens with them to the pot.

How It's Done.—The essential point of the whole proposition is how such yields can be secured, for only by knowing can it be said, "Go thou and do likewise."

In the first place the soil is a light sandy loam and is naturally productive when it has sufficient water and will take more water at an irrigation than will heavier soil. In the second place it is given lots of water. That is about all there is to it, though fertilization would be needed too after a few years to keep up a pace like this when hay is sold, for the stand is only three years old.

The irrigation is done by centrifugal pump and electric motor, water being distributed with surface irrigation pipe. The bill for power is just about double that of most irrigators which is the ground for the belief that the essential reason for big yields is in the use of an abundance of water. All investigations have shown, of course, that the more water, the more alfalfa, though the increase may be small after the water reaches a large amount.

The 10 inch well is 96 feet deep and the lift, when the pump is in operation, is 25 feet to outlet. The pumping cost is $1.00 per irrigation per acre, or $12 per year, though probably still more power will be used this year than last and the cost, therefore, a little more too. The labor cost is also $1.00 per acre per irrigation, which with the $1.00 or so average cost of cutting and harvesting, would make about $36 per acre per year for all this alfalfa of one acre in the stack. The selling price was $11 per ton this year in the field, with the buyer taking the hay off, so the net profits will be approximately $110 per acre.

Irrigation System.—The land was prepared on the border plan or by strip checking, though many users of irrigation pipe have no checks at all. The small levees are 39 feet apart, center measurement and leveling was done only one way, that is, cross ways. There is a rise across the middle of the field at an angle and the well is located at one end of this, then the irrigation pipe is run along this to the further end and an elbow put on to run the water down to the end of one check, the joints being gradually removed. Then when this check gets enough water the other side is irrigated, then about four lengths of pipe removed and the next check irrigated until the work is over and the irrigators back to the pump. The labor price we have said is about $100 per acre and the work done evenly and thoroughly. Six hundred feet of 8 inch pipe are used, costing 30 cents a foot.

By having the narrow checks the water can be kept just where it is wanted and a much neater and uniform job of irrigating done than if the land was leveled as well as most alfalfa is. That is one reason for the big yields and the cost of checking like this is small and the low levees are no hindrance to cutting and other work.

A rather poor stand was first secured on these levees, but each year there were more plants growing there, apparently of their own accord and now there is a nice stand there. Seeding, by the way, was done broadcast.

Barley Replaces Foxtail.—There is another field of alfalfa which last year was sowed to barley in the winter with great success. This is not altogether new, as some growers practice it every year, but it was looked upon as a risky experiment at Manteca. The barley was sowed broadcast in December, 30 pounds to the acre, and was followed with a spring tooth harrow with four horses to loosen up the ground, split the crowns of alfalfa and cover the barley. Naturally, however, a smaller proportion of the barley grew than would have come up in a plowed field where every grain would have gone in the right place.

The barley took the place of foxtail all right and grew finely, as the alfalfa gave rich soil for it. The alfalfa also grew taller on account of it and 2¾ tons to the acre was taken off, of which about ¾ tons seemed to be barley and the rest alfalfa. It made the finest kind of hay and the alfalfa was benefited, not injured.

When to Cut.—For the original field described that gives the record yields, cutting is done when the alfalfa is in about one-tenth bloom, or when the new growth has started from the crown. This gives the greatest yield of best hay. If cutting is done before the shoots have started, the top does not make full growth and the alfalfa is slow about starting. Furthermore the alfalfa is too green and watery and has not the food value of older alfalfa.

If the shoots have more than about five days' start, the alfalfa probably will get a little too woody and the shoots also will be long enough to be cut and there is a delay in the starting of growth after cutting again. For both yield and quality there is objection to cutting at any other time than just when the shoots are starting.

Furthermore, the objection that some dairymen make to cutting at this time on the ground that the hay is too coarse and that it is better to get finer hay and less of it, does not hold good here, all because lots of water is used. Mr. Veach claims that the generous amount of water applied keeps the growth tender until the time to cut has fully come. In other words, use lots of water and you will get a 100 per cent yield and the biggest yield is accompanied by the best quality of hay. Use too little water and the yield is less at the best of it and has to be further reduced if quality is to be up to standard. The essential point of the whole story is the use of lots of water, and with that is needed a rich soil and one that the water will sink into.

BEET PULP AND HOG MANAGEMENT.

To the Editor: Will you kindly tell me where I can purchase beet pulp? How much do you think it is worth a ton? I want to feed it to my hogs. This last spring on account of the hoppers I scattered over my vineyard bran poisoned with arsenic. Do you think it is safe to turn my pigs into this vineyard now?—J. P. T., Roseville.

You can purchase beet pulp (dry) from the Larrowe Milling Co., 607 Central building, Los Angeles. This is the pulp you would want, although fresh pulp is a fine feed to pitch into steers for fattening, etc., right at the mill where cost of handling is small. This is just about the best single concentrated food a dariyman could feed to cows with alfalfa hay considering the price, and also is an excellent hog food. Alfalfa, or some other food rich in protein, ought usually to be fed with it and alfalfa is our cheapest and most abundant feed.

The exact value as a hog food is very hard to determine and no experiments under California conditions have been carried on to our knowledge. The total amount of digestible material is approximately the same as in an equal weight of wheat shorts which will give one basis for determining price. The mere amount of digestible material, however, is hardly sufficient to base final judgment on. From physical effect on animals or from the way it combines with other foods one food may have a much higher value than another which has just as much digestible material.

The only experiments that Henry in Feeds and Feeding tells of with beet pulp and hogs was conducted at the Utah station. The beet pulp was fed fresh and fresh pulp is only about one-ninth as concentrated as dried pulp, which can be moistened up. In these experiments 444 pounds of shorts fed alone were needed for 100 pounds of gain, against 275 pounds of shorts and 1,030 pounds of fresh pulp. That would give 169 pounds of shorts against 1,030 pounds of fresh beet pulp, or if one pound of dried pulp is worth nine of fresh, 169 pounds of shorts against 115 of beet pulp. However, this comparison taken at its face value does the shorts an injustice, as the pigs made a quicker gain on the shorts alone than on the combination and furthermore a combination of feeds is always more effective than either of the feeds alone. The experiment simply shows a high feeding value of beet pulp.

This seems clear from other experiments with sugar beets or mangels as hog feed in connection with grains, as they proved cheap and very effective and beet pulp is of approximately the same nature and value as beets when the same amount of moisture is contained in each. It is a very desirable feed with either grain or alfalfa or in most other combinations.

If the poisoned bran is still in dry lumps in the vineyard so that the hogs can eat it, they very probably will do so and be killed or made pretty sick. If it has fallen apart and is sprinkled over the soil or mixed with it, there is no danger to fear. You can tell by inspecting the conditions.

TO PROHIBIT CALF SLAUGHTER.

Convinced that the high prices of meats could be sharply and effectively reduced through the enactment of a law prohibiting the slaughter of calves, the Veterinary Adviser says an appeal will be made to Congress, by those who have studied the question, for some such legislation. Eminent physicians throughout the country will

be asked to testify as to the unwholesomeness of veal as food, and their testimony will be submitted to Congress when the crusade is launched. Argentine, it is pointed out, has a law which prohibits the killing of a male beef animal until it is three years old, and a female until it has reached six years. Leaders in the movement contend that the slaughter of calves in the United States has not only raised the price of meats, but is threatening its standing as a meat-producing country.

HENRY MILLER AND HIS EMPIRE.

(*Continued From Page 361.*)

would get worse. On his arrival at a ranch there was no time lost. He first inspected the house, nothing escaped him, dust under the rounds of the chairs, dirty windows, soiled sheets. Then he took in the kitchen. He looked in the corners for dirt, grease on the pots and dishes, flies on the walls, and if there was any untidiness, a new cook was forthcoming. From thence he would go to the slop barrel. His attacks on this receptacle are famous, there is no ranch but has a pet story in this regard. If he saw any pieces of meat that could be used for stews or soups, or potatoes peeled too thickly, someone had to explain the waste. For, as he often said: "I can stand severe losses where unavoidable, but small losses due to carelessness and inattention are unbearable."

The barns and outbuildings would next be inspected. Loose boards scattered about, instead of being neatly piled in the place set apart for them, would bring a reprimand to someone. Any rubbish thrown in a corner, he would kick out into the open so that the man who had such work in charge would not fail to see it. This shrewd German knew human nature well enough that it took some such emphatic way to impress upon the men that the ranches had to be neat. Once at the Bloomfield ranch, after telling the store-house keeper several times about scattering nails from the kegs, he found the floor littered as usual, so he kicked over every barrel of nails in the place and then made the man pick them up. After that, no one ever saw a nail on the store-house floor.

It was the same way with loose sacks hanging on the fences, broken down farm implements, and the like. If they were worth keeping, there was a place for them, if not, they had to be burned. There could be no loose hay or straw scattered around the stacks or sticking out of the barns for the wind to blow and increase the danger of fire. All barns and out-buildings had to be white-washed frequently and the roofs painted red. Not even a skeleton or carcass of stock could be left in a field or gully, no matter if 20 miles from the ranch house. If it could not be brought in and given to the poultry, it had to be burned.

There was no "manana" with Miller. Of work had to be done there was no time like the present. Or, as he would tell his men who wanted to put something off. "If a thing can be done to-morrow why can't it be done to-day." Some thing has to wait any how, and to-morrow, you'll be just as busy as you are to-day, so do it now. If a strap on a harness broke, a hinge on a door pulled off or a shingle, it has to be fixed immediately.

When he told his men to do anything he never forgot it, although thousands of details came up in the meantime. Once at the Peach Tree ranch he told one of his men to fix a loose wire on a fence. The next June when he returned (of late years he only visited this ranch once a year) he discovered the fence had not been mended, so he went and hunted up the man that he had told to do the work. "See here, last year when I told you to fix that wire it was only pulled loose from one picket, now it is three. Go get a hammer and staples and I'll wait till you mend it." To a person with only a few miles of fencing this would be nothing, but when he maintained this close watch over thousands of miles of fence it is astounding. And it was not only fences that he kept close account of but every thing on the ranches. Even with particular ducks, chickens and turkeys he has been known to insist upon an examination as to their disappearance.

Management of Ranches.—There is no business in which specialization is carried on to a greater degree than on Miller ranches. There is a general superintendent, division superintendent, and "camp" or ranch foreman. The big holdings are divided into divisions such as "Los Banos" and "Santa Rita." These in turn are divided into smaller farms or "camps" such as "Hog Camp," "Midway," "Dutch Boys" and "Colony Farm."

Mr. Miller believed in having specialists for every line. We find sheep, hog, cattle and horse superintendents who do nothing else but attend to work in their department. It is the same way with his buyers, his sheep man buys only sheep and if he wants a horse, the expert on horses gets him an animal. Only certain men build fences, butcher, brand and mark stock, part out, ship stock, carpenter, poison rodents, break horses and build hay stacks. This specialization is evident as soon as one comes in sight of a Miller farm. The fences look as though they have been put there by machinery, so taut are the wires and regular the posts. And the hay and straw stacks are worth going miles to see. There are men who have done nothing else but build hay stacks for the last 23 years and when they finish a stack it is water proof and looks as though it had been made in a mold.

It is by keeping his men so long that such efficient work is done by them. The sheep superintendent, who worked steadily for 33 years only recently quit. Some of the vacqueros have even worked longer than that for him. These men who have remained with him and are what he terms "loyal" he treats with much consideration. They are given blank drafts and use them buying stock without a question being asked. It is said that the sheep superintendent has sent in drafts for as high as $50,000. Many of these "loyal" men after they became incapacitated for work were given pensions and shacks on the outskirts of some ranch.

For superintendents, Miller wanted men who were aggressive and alert. Often he would make assertions that he knew were wrong to see if his statements would be refuted or agreed to, simply because he was boss. If a man's ability or rights were impugned and he made no resistance, he was no wanted, for as Miller said: "A man who won't fight for himself, will never fight for my interests." And the man who was aggressive and yet obeyed orders made the hit with Miller as is illustrated by the following incident: One day as Mr. Miller was driving to a ranch house, he came on a laborer digging post holes for a corral. Miller jumped off his grey horse.

"Don't dig those holes here. I want the corral nearer the barns." The man continued digging. "Stop it!" yelled Miller. "Go to the devil!" yelled back the man. "I was told to dig these holes here by the boss and they are going to go here." Miller tried to take the shovel away but the fellow knocked him down. He then jumped on his horse and rode to the superintendent.

"Who's digging those holes?"

"A new-comer that just dropped in for a job."

"Well, make him foreman. He is one man who will obey orders."

A Far Sighted Man.—There was no one in the West who could size up a bunch of cattle quicker than Miller. Countless instances are heard where he would ride through enormous bands of stock, then come back to the owner and offer so much per pound or a lump sum, and when the weighing was done there would be but a few dollars difference from Miller's reckoning. If a better price was asked, Miller would get on his horse and ride away. He would never haggle. If he bought the band, it was final, and he would notice any changes. A very prominent cattleman of Santa Clara tells the following story on himself illustrative of this point. He sold Miller 500 steers and cows and the vacqueros from the Bloomfield ranch were to come the next morning and drive them. But before Miller left he asked the man to put the stock in a large field as he was afraid the cows would hook each other in a lot they were then in. However, the stockman thought differently and in the morning found a dead cow just as Miller had prophesied. Feeling that he was to blame, he substituted another in its place. When the stock arrived at Bloomfield, Miller looked them over and then walked up to the stockman. "Where's that cow (giving it distinguishing feature?) When Miller heard he chuckled: "All right. This cow is worth $3.00 more than the other one."

In handling his ranches, Miller was always looking ahead, anticipating what was to happen. He had given such close attention to his work that the ordinary, inconsequential occurrences of the moment made no unconscious impression on him, and he knew history repeats itself, so we find him giving out daily verbal and written warnings, usually a month or so in advance. Every phase of ranch life was covered. An instance: "The latter part of next month (July) the flies and mosquitos leave the ranges of Nevada so be prepared to rush the stock on the feed before the first frosts ruin it" and "after the first of next month (May) be prepared to fight fires, so get all the apparatus in shape to-day."

But "prepare for feed" is the shibboleth that has put Henry Miller where he is to-day in the millionaire column. He kept in close touch with his superintendents in the spring, in order to find out the number of live stock they would fatten and the number they would carry over. The amount of feed necessary was then estimated and plans made to get it. But the tonnage was always over estimated, as "better have too much feed than not enough, because we can always buy stock to eat it up. For no greater calamity can befall a stock man than have his feed run out. It means either of two things: Buying expensive feed in the dead of winter or else moving them back on a range where all the finishing feed given them to date is lost."

To get enough feed Miller would rent ranges and stubble fields for long periods just to have them for emergencies. And such hay and straw stacks he would build. Sometimes his straw stacks would be a quarter of a mile long. Straw was something that Miller never wasted. The light straw that could not be stacked was scattered over the fields in small dabs so that the stock could eat it and yet not lie down in it, as they do when piles are large.

Miller: Producer, Retailer and Wholesaler.—Henry Miller holds an unique position in the live stock world. With his large packing house and abattoir in San Francisco he sells meat wholesale; in the San Joaquin valley he has a system of butcher shops and slaughter houses from which he retails and wholesales and on his ranches he buys and sells fat cattle on the hoof.

On account of the wide variance in climatic conditions of the various ranches, he produces for his own use almost every kind of staple cereal, fruit and vegetable grown in the West. These are then interchanged among the different farms. Any of the surplus dried fruits, cheeses and the like are sold at the system of stores maintained at the towns along his holdings. Also, these stores sell the dried and prepared meats, hams, bacons, lard and oils made at the San Francisco packing house. On account of the enormous quantities of supplies bought to supply his ranches, stores and other enterprises, it is said that he gets materials at a very low figure, getting traction engines as he does by the half dozen, alfalfa seed, barb wire and lumber by train loads.

Besides the system of stores, there are banks and hotels in each of his towns. At Gustine, on the West Side, his hotel and store buildings cost $60,000 and a bank building $25,000. The work on these buildings and also on his farm buildings is all done by day labor. While it may cost a little more and take more time, the work done is substantial, a very important item to Henry Miller.

Thus we find Henry Miller, the big brained, far sighted German who in 63 years has built up one of the largest fortunes in the West by always keeping his ear to the ground for the main chance, or, as a bitter personal enemy, who fought him in all the courts over land and water, once said: "The difference between Henry Miller and the rest of us is, that when we want to find out what's going on over on the other side of those mountains (pointing at the Coast Range) we have to climb over them and see, while this foxy German just looks through the hills."

With the Livestock Men.

Frank Griffith, live stock inspector for Kings county, in his report states: During the month I have found but two places where hog cholera exists. Only one case of blackleg, and in a band of ten dairy cows where test for tuberculosis was made I had but one reaction. Cases of anthrax have been reported to my office but none of the reports were verified on investigation.

One of the few shipments of pure bred stock from a western breeder East was made by F. E. Mobley of Fallon, Nevada, last week when he shipped a cow sired by Financial King to Files Brothers of Unionstar, Missouri. It is to be hoped that the time will soon be at hand when more of our pure bred breeders will be benefitted in the same manner.

Merced county is soon to have a certified milk commission which will have the power of passing on certified plants.

The Ord ranch of 1300 acres, lying two miles northeast of Gridley along the Feather river has been leased for a 9½ year period to a company of Portuguese dairymen, headed by M. T. Machado, a pioneer dairyman of this section. There are about ten shareholders and the ranch will be apportioned among them. Eight houses are in course of construction near the site of the old ranch house, which will allow a community life. Alfalfa will be grown on practically the entire acreage, about 600 acres being irrigated and the balance lying along the river bottom, not irrigated. About 1000 cows will be kept. San Francisco capitalists are said to be backing the project.

The fall round-ups in the mountains adjacent to Kern county are now in progress and cattlemen are beginning to get their stock out before the start of the winter snow storms higher up.

What promises to be the foundation for one of the largest herds of pure bred Holsteins in the State is being started by Frank Helm of Fresno who has recently purchased the herds of Dr. Evans of Modesto, the herd of the Floubel Land & Cattle Co. of Hardwick, part of the Minnewawa herd at Fresno and a few head from the University of California. The herd is now located on the old Fulton Berry ranch near Fresno which is rapidly being transformed into an ideal dairy with silos, sanitary barn, etc. One of the herd bulls to be used was purchased from the University of Nevada and the herd of 75 head at present will be built up until ultimately there will be 500 head of females.

A shipment of 350 head of cattle was made during the week from Plumas county billed to Oakland which was considered one of the finest bunches shipped from that section this year. The sale price for the bunch was $20,000.

Prices for wool in Cloverdale ran from 8½ cents to 10 cents a pound during the past week. The wool crop this year is estimated to be about 350 sacks when the fleece is all in which is considered smaller than in former years due to sheep men preferring to do their shearing in the spring.

E. R. Mackay of Reno, Nevada, has been employed by Miller & Lux to act as assistant superintendent on their ranch at Los Banos.

A shade steadier market in beef with prices of prime steers at $7.50 to $7.65 and cows at $6.50 to $6.75 was the condition of the market at the Portland Union Stock Yards last week. Prices of hogs fluctuated from $8.60 to $8.70 with a fair outlet for good light hogs. Sheep were steady to weaker with choice yearlings at $4.50 and prime ewes $3.75 to $4.00. Lambs failed to reach over $5.00.

The Jersey Breeders held their regular monthly meeting at Modesto October 11 to take up some plan for holding an annual heifer futurity contest.

R. H. Dunlap of Newman will leave in a short time on an extended trip throughout the East to purchase two carloads of registered Hereford females and also a high class herd bull for the Simon Newman Co. of Newman. He states that sales this year have been exceptionally good with the white faces and the need of a larger herd is now felt.

A $15,000 loss is reported on the ranch of C. C. Boysen, of Sonoma county due to fire in a barn which contained hay, horses and farm implements.

A creamery man at Porterville estimates that only about one third the number of dairy cows are being milked in that part of Tulare county as compared with two years ago. High hay prices are said to be the reason for this condition.

Miller & Lux are chopping most of their alfalfa and putting it into stacks in that form to be used later on in connection with barley for fattening beef cattle on their west side ranches in Merced and Stanislaus counties.

During the period from July 1 to July 21 records for the Holstein-Friesian Advance Register have been accepted for entry from California breeders as follows: Gerben of Glen Eva 163614 gave 289.4 pounds milk 10.34 fat and Lady Skylark Bodera of Glen Eva 162569 gave 299.9 pounds milk 9.94 pounds fat, both senior 2 year olds, also Grace Tweede Aaggie 90442 with 353.7 pounds milk containing 12,357 pounds of fat, a junior 2 year old, all owned by M. A. Maclean. J. H. Harlan Co. recorded a junior 2 year old, Yonda Fidessa Mooie 163135, with 299 pounds milk 12.6 pounds of fat, also a junior four year old, Salombo Komdyke Mooie 163136 with a 30 day record of 1884.4 pounds of milk, 60.90 pounds of fat.

A very good opportunity is being offered stockmen who contemplate starting pure-bred herds of Jersey cattle or Berkshire hog foundations, as may be seen in the announcement of A. H. Brinton, of Woodland, who states that he is compelled to dispose of these herds on account of other pressing business. The writer has seen both of these herds, and, knowing that they both contain blood of some of the foremost breeds of Jerseys and Berkshires in the State, believes that they would make a good starting for some one. Who is the man?

Six Beautiful JERSEY HEIFERS For Sale at a Bargain

two and three-year-olds. St. Lambert strain. Three are due to calve this spring. Stock is perfectly gentle and in good condition.

WILLIAM P. WRIGHT

Mountain View Santa Clara County, Cal.

SWINE.

REGISTERED DUROC JERSEY SWINE Some extra good young boars for sale, ready for service. Best Eastern strains. Ed E. Johnson, Turlock, Cal.

REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

REGISTERED BERKSHIRE BOARS, sired by Silver Tip Duke and Third Masterpiece. V. A. Peterson, Blacks Station, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

DUROC JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

EUCALYPTUS STOCK FARM—Registered Duroc Swine and Holsteins; prices right. J. K. Fraser, Denair, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroghbred Berkshires.

REG. POLAND-CHINAS. Fine young stock. C. R. Hanna, R. D., Riverside.

FAIRVIEW STOCK FARM—Reg. Poland-China hogs. W. A. Young, Lodi.

CHAS. GOODMAN, breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

DAIRY CATTLE.

WORLD'S RECORD HOLSTEINS—Bull calves sired by sons of King of the Pontiacs and Friend Hengerveld De Kol Butter Boy, the sires of world's record cows. Pedigrees and prices on application. Clausen & Peterson, Blacks Stat., Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

REG. GUERNSEY CATTLE and Hampshire hogs, young stock for sale. Bella Vista Stock Farm, First Nat'l. Bank Bldg., Berkeley.

CHAS. L. LEONARD, Jacinto, Glenn Co.—Registered Jersey service bulls, sired by Gerties Lad, Gerties Son, and Mellas Fox, for sale.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

JERSEY CATTLE, DUROC JERSEY SWINE. Mossdale Farm. J. E. Thorp, Stockton, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

MINOR & THORNTON, Breeders of Reg. Holstein-Friesian cattle. Kearney Park P. O., Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouilletes, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

AIREDALE TERRIERS, the best all-around dog of the day. Puppies and grown stock. DROMORE KENNELS, Vallejo, Cal.

FOR SALE—Burebred yearling Cotswold bucks. For further particulars inquire of Lewis Sharp, Ruby Valley, Nevada.

FOR SALE—85 highly graded young Shropshire ewes; two thoroughbred rams. Perkins & Co., Perkins, Cal.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

BRAE BOURNE RANCH—Berkshire hogs and Tri-color Collies. Young stock for sale. Mr. and Mrs. C. E. Rand, R. No. 3, Box 69, Santa Raso, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

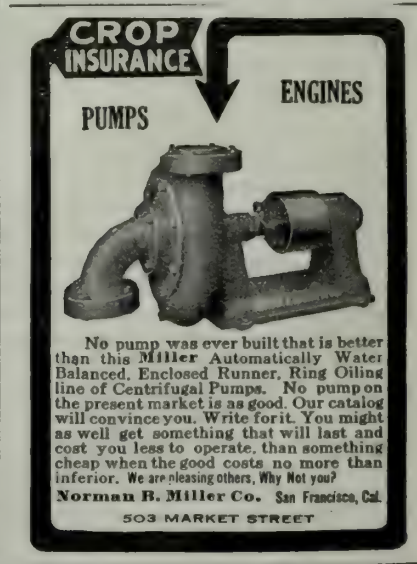
PAICINES RANCH CO.—Breeders of Registered Percherons and Short-Horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle

Calves Without Milk

Cost less than half as much as the milk raised calves. Increase your profits by using

Blatchford's Calf Meal



Livestock on National Forest Ranges

A marked increase in the quantity of livestock grazed on national forest ranges during the past fiscal year is reported by the forest service. Nine and a half million domestic animals have been occupied during the summer converting one of the by-products of the forests into meat, hides and wool. In addition, there were in round numbers three hundred thousand calves and five million lambs and kids exempt from permit and therefore not enumerated.

According to the figures gathered, the amount of stock grazed under permit during the year is over four per cent greater than for the previous year, while the number of permittees using the forests for pasturage purposes was increased from 26,501 to 27,466. The total receipts by the government from grazing fees for the twelve months ending June 30, 1913, were $1,007,739, and the portion of this applied to schools and roads in the States in which the national forests are situated is about $352,708.

Grazing is second only to lumbering as a principal use of the national forests. Practically all of the national forests used extensively for grazing purposes are within the eleven States extending east from the Pacific Coast, known as the "far western group." These States contain, according to latest reports, 8,546,000 cattle, 2,810,000 horses and mules, and 28,366,000 sheep. The national forests support in these States 17 per cent of the total number of cattle grazed, 3.48 per cent of horses and mules, and 27.5 per cent of sheep.

It is estimated that the annual product of these animals is 300,000 head of beef cattle of various ages and grades and 5,000,000 head of lambs and mutton sheep.

Since the average net meat weight of a beef animal is 515 pounds, of a lamb 37 pounds, and of a sheep 52 pounds, the stock grazed on national forests in the eleven far-western States produce annually about 155 million pounds of beef and 312 million pounds of mutton. In addition, it is said the wool grown totals 55,000,000 pounds, hides approximate 300,000 in number, and pelts 5,000,000.

This output, according to the forest service, does not involve any material sacrifice of forest or watershed protection or permanent forage productivity on the national forests. The system of range management applied by the government has proved, it is claimed, effective and simple, and the quality and quantity of the national forage is said to be improving each year.

BUTCHERS NOT SO BAD AFTER ALL.

"Whatever be the margin between the producer's price and the consumer's price," says the Crop Reporter, published by the Secretary of Agriculture, "It has not widened much, if any, during the last 20 years of advancing prices." Comparing the last 10 years with the decade preceding, it is found that while the price of wheat advanced 32 per cent, and the wholesale price advanced 29 per cent, the retail price of flour increased only 28 per cent. Hogs advanced in the second decade 33 per cent, but the retail price of smoked hams increased by 32 per cent. Smoked bacon advanced 55 and pork chops 41 per cent, as compared with the 33 per cent advance for hogs, but this is because they represent the choice cuts for which there has been a growing demand. The figures for lard are wholesale 31 per cent, retail 30 per cent, and for steers and sheep the figures are much the same. Potatoes showed an increase in retail over wholesale advance, but only of 3 per cent, in a better light.

These figures don't solve the problem of high living, but simply put the butcher

A large amount of development of alfalfa land through irrigation by pumping from wells is going on at Gonzales, in the Salinas valley. Lessors of Gonzales property have arranged leases that have the development of water a fundamental point. Charles Bedolla has leased 350 acres which he will plant to alfalfa an develop a dairy thereon.

Practical dairymen know that a cow can't do her best work on a ration that isn't properly balanced. She must have not only protein but a sufficient amount of carbohydrates as well.

Alfalfa is a wonderful feed and rich in protein—but should never be fed alone as it is deficient in carbohydrates. But, you can balance your alfalfa ration perfectly by the addition of Larrowe's Dried Beet Pulp—keep your cattle in better condition—and get from 1 TO 5 POUNDS MORE MILK PER DAY FROM EACH COW. This is not theory but fact—proven by thousands of dairymen.

Larrowe's Dried Beet Pulp is not only the ideal feed to balance your alfalfa ration but an invaluable addition to any feed,—for it is succulent, cooling to the animal's stomach, aids digestion; will make your cattle bright-eyed, sleek-coated, and prolong their milking periods.

Read what these practical dairymen say:—

Pasadena, Cal., June 28, 1913.

The Larrowe Milling Co.
Gentlemen: Two weeks ago when our season's supply of dried beet pulp at Sunny Slope Dairy became exhausted, our herd dropped in milk flow three pounds per cow per day despite the best of other foods. Experience seems to confirm the high percentage of carbohydrates claimed by the chemists for dried beet pulp, as an efficient and economical food to balance with alfalfa hay and bran. I know of no superior to beet pulp for California dairymen.
(Signed) Albert Hatcher Smith.

Los Angeles, Cal., June 15, 1913.

The Larrowe Milling Co.
Gentlemen: I have thirty-five cows in my herd, and for the greater part of the past winter have been feeding them dried beet pulp and alfalfa hay. Since I began feeding the pulp I am getting not only more, but richer milk than before and I expect to continue feeding it, as I believe it is the cheapest food I can get.
Yours truly,
(Signed) Charles De Grout.

Larrowe's DRIED BEET PULP

—simply the natural root of the sugar beet, shredded clean and pure—with only the sugar and water extracted. It is light and bulky; **swells to about six times its original bulk when moistened.** Always uniform, clean and pure. Keeps indefinitely. Costs less than bran or rolled barley—and gives better results.

It is also a valuable feed for poultry, horses, hogs, sheep, etc.

JUST LIKE ROOTS

Cattle eat Larrowe's Dried Beet Pulp ravenously—either dry or moistened.

Go to your feed dealer today and get one or more 100-lb. sacks of Larrowe's Dried Beet Pulp—and prove to your own satisfaction the wonderful value of this feed by serving it to one or more cows whose milk record you know. The results will be almost immediate—and the cost practically nothing. You can't afford not to be getting the benefit of this succulent, healthful feed.

SOME FEEDERS PREFER—Larrowe's Molasses-Dried Beet Pulp on account of its sweetness. This is just the plain beet pulp with the addition of beet molasses dried. An exceptional feed for fattening, as well as for dairy cattle. Particularly good for horses; it improves the general condition as well as coat. Let the horse try it and he'll show you the way he likes it and how he behaves under it.

LARROWE'S MOLASSES-DRIED BEET PULP

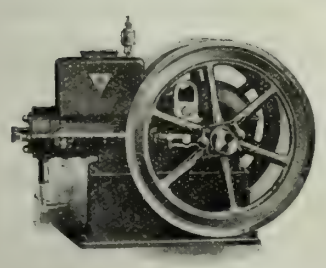
Larrowe's Molasses-Dried Beet Pulp is put up in the same way as the plain and sold on the same basis. Order a trial sack from your dealer and note the relish with which your stock take to it.

"PROFITABLE FEEDING"

—a little booklet that we have issued giving valuable facts about dried beet pulp, instructions for feeding, etc., will be sent free to any address upon request.

The Larrowe Milling Company
607 Central Building, Los Angeles, Cal.

Two New De Laval Products



Alpha Engines

Why not buy an up-to-date engine that has done away with all of the objectionable features that are so common in most gasoline engines. All **Alpha engines** have the new geared-in magneto and require no cranking. Let us tell you more about this engine.

Ideal Green Feed Silos

are sweeping the field. Dairymen of the Pacific Coast States are coming to realize the advantages of the silo and to appreciate just how much better the **Ideal Green Feed Silo** is than any other make.

Material used in the manufacture of these silos is best grade Redwood, selected tank stock. **Ideal Green Feed Silos** are air-tight, which keeps the ensilage from spoiling and will last a lifetime.

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DE LAVAL DAIRY SUPPLY CO.

101 Drum St. SAN FRANCISCO
1016 Western Ave. SEATTLE

"Everything for the Dairy & Creamery"

HEREFORD BULLS

100 Hereford Bull Calves 100

FOR SALE

Single or in Carload Lots

DAVID JACKS CORPORATION - - MONTEREY, CAL.

Grade Holsein Record.

To the Editor: In January last, I sent you the milk record of my Holstein cow "June," for her first two months after freshening and you were interested enough to say that you would like to know her production for the full season when finished. As she comes fresh again November 9th, I felt compelled to dry her up before completing the twelve months, so that although she is still giving (much against my will) about 8 lbs. per day at irregular milkings, I considered her season closed October 1st, at which date I ceased to milk her twice a day regularly. Her record follows:

Oct., 1912	12 days	765 lbs.	test 2.80
Nov.,	30 "	2132 "	" ....
Dec.,	31 "	2004 "	" 3.10
Jan., 1913	31 "	1475 "	" ....
Feb.	28 "	1063 "	" 3.30
Mar.	31 "	1138 "	" ....
April	30 "	1167 "	" 3.90
May	31 "	1082 "	" ....
June	30 "	929 "	" 4.10
July	31 "	834 "	" ....
Aug.	31 "	720 "	" 4.40
Sept.	30 "	535 "	" ....
	346 "	13,844 "	

During her milking period previous to this her lowest test was 3.80, and highest 4.10. So I hardly understand the extreme variation shown later.

The cow is perfectly formed and marked as a Holstein, though I suppose is only a grade, as I am unable to find any registry.

Her sole and only ration has been alfalfa. Sometimes pasture, some alfalfa meal, but mostly dry hay, and considering this and the fact that she received no special treatment or handling, I think her production rather remarkable.

I have a pair of Howe platform scales mounted on a shelf behind the milking floor, and every cow's milk is weighed and recorded as soon as she is milked. Samples are tested every 60 days.

Of course there is nothing official in all this, but as I have no stock for sale, and the records are kept for my own guidance and satisfaction, I think they are worthy of credence. As you will observe the cow fell off badly in January and never recovered, and I account for that because of not having proper shelter from the heavy southerly storms that came in that month, for, although the milking shed is left open at night, the cows prefer to stand outside in the storm, rather than stand on the plank floor.

I have remedied that defect this year by erecting an outside shed with earth floor.—ARTHUR L. BRUCE, Stevenson, Cal.

REMARKS BY ASSOCIATE EDITOR.

The record is an excellent one and without the slightest doubt would have been much better if the cow had been coddled and forced by special feeding and care. As it was she averaged 40 pounds a day for the 346 days of lactation. The fat production was approximately 495.56 pounds during this period, or an average of about 1.43 pounds per day.

A little lesson can be given here as to methods of figuring out results from the Babcock test. In doing this figuring it is customary to count the test of a certain date as applying both backward and forward rather than all forward or all back- [illegible] For instance, if the test of 3.3 [illegible]ken on February 1st, it would be [illegible] to apply it to the milk of January [illegible] bruary, and the test of April to [illegible]arch and April. That would be better [illegible] making the February test apply to the milk of either February and March, or of December and January, etc.

There will also be noted the wide range in milk test at different periods, that is, from 2.8 to 4.4. This is altogether normal for a cow's milk generally gets richer as time goes on and it shows the reason for frequent testing and how misleading it would be to only test one sample of the milk in the year. Why there was less variation during the preceding lactation period it is hard to state. However, a cow that is overly well fleshed when calving will give richer milk for a time than a cow rather thin or only in average condition, and perhaps this cow had more fat on her bones at the previous calving than in October, 1912.

The point about enjoying open air in spite of cold and rain is being appreciated in colder and more disagreeable climates than ours, for sheds open on one side as winter shelter are being substituted for closed barns and with our fine open winters good shelter in the open is vastly superior to either tight or drafty barns.

PASTURING SORGHUM.

To the Editor: I see in your reply to E. L. S. of 9-13-13, you say that second growth sorghum contains prussic acid. I have been experimenting this year with sorghum, milo maize and Kaffer and Egyptian corn and expected to plant quite largely, especially of the sorghum next year. I cut the first crop and cured it for hay then expected to pasture the second crop. This is grown without irrigation, consequently makes a slow growth. Would it be safe to pasture this if kept fed down close? And do all of these feeds contain the prussic acid? Which do you consider the best to raise for cow feed?—C. A. M., Ramona.

(All the plants you mention are sorghums and they are all apt to develop prussic acid under conditions favoring it—but, as a matter of fact, they rather seldom do it. For this reason much use is safely made of such growth as you plan to do. One can only tell by analysis by establishing a laboratory in the field, whether the stuff is safe or not, because if cut and sent to a distant laboratory, the poison could disappear. The practical test is to turn a small-value animal into the feed for a day or two and determine safety in that way for the rest of the stock.—EDITOR.)

BRITISH CATTLE MAY BE IMPORTED.

The British Board of Agriculture has succeeded in overcoming the outbreak of foot-and-mouth disease, and cattle shipped from English ports will now be admitted. Owing to the fact that many importers of pedigreed British cattle, sheep and swine are unaware that the prohibition against the importation of ruminants and swine from Great Britain, on the ground of the presence of foot-and-mouth disease in these countries, has been removed, the British Ambassador through the State Department, has requested the Secretary of Agriculture to make wide public announcement that the disease has been eradicated and that importations to the United States are now permitted.

The national [illegible] contain water powers [illegible] aggregate estimated capacit[illegible] 12,000,00[illegible] horse-power, available for use under [illegible] it from the Secretary of A[illegible]

Mo[illegible] [illegible]urch of all the sheep in t[illegible]en states nearest the Pacific co[illegible] are grazed on the national forests.

A. C. RUBY, Portland, Ore. C. W. BOWERS, Sacramento.

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We sell more imported horses than all other firms on the Coast because we are direct importers and give a four-year guarantee which is good right at home. We have on hand at all times the largest and best lot of heavy draft stallions and mares, both American bred and imported, to be found any place in the West. If you are in the market for a high-class stallion or mare, don't fail to give us a call, as we can sell you more genuine horse for the money than any other importer in the business.

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Am sold out of yearling Shropshires, but can furnish fine Shropshire Ram Lambs sired by Rams imported from England.

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At the State Fair just closed, every first prize in the Shire classes was won by horses imported by the Salvador Stock Farm.

Stallions and mares for sale at reasonable prices.

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Hopland Herd Shorthorn Cattle

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Eight Yearling Bulls, Grandsons of the famous sire King Edward—six dark red and two roan.

Also three registered yearling Holstein Bulls, exceptionally good values. Write for prices.

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Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

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Call and see them at Modesto (5½ miles northwest).

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R. F. WILSON, Stockton, California.

Abortion and Veterinary Book.

On August 14, 1913, I purchased a quiet, gentle, good milking cow which I was told had been fresh several months and was milking after having a second calf. I judge she is about 3½ years old. We had a little difficulty in loading her in the wagon, but nothing serious. On the evening of September 7th, while in the stanchions at milking time she discharged a bunch of matter which we suspected as an abortion, but we are not sure and would like your opinion and advice.

The amount of this substance would have a little more than filled an ordinary tea cup and it was of a whitish color and its consistency was about that of the white of an egg. In this substance was a lump of something about half as long as a man's index finger and of a white color which looked like a piece of soft gristle.

The cow appeared to be absolutely normal before this happened. After thinking the matter over we decided to take all the precautions we could, so next morning she was douched out with a warm solution of water and half a thimblefull of permanganate of potash.

At about 10 a. m. that day we noticed she was in heat and we then took her from the herd and started treatment for abortion. There was absolutely no further discharge and there has been none up to date. She is milking as well as ever and appears to be healthy and normal. We have continued the douche every few days and also given a certain patent medicine.

This cow, according to the man who sold her, was bred on May 13, 1913, and she should calve about February 18, 1914. These dates, however, I do not consider reliable and quite likely wrong as the cow has not been in reliable hands.

On September 30th, she came in heat again, 22 days after her previous heat. You will note that we got the cow on August 14th, which is not 22 days before her first heat and apparent trouble, so I don't know whether or not she came in heat a few days before I took her to the ranch.

The cow looks strong and healthy, is milking well and has no discharge at all. I am inclined to believe she was never bred at all since her last calf was born. The "wise ones" tell me she has aborted. What is your opinion? I am afraid to breed her until I know whether or not it really was an abortion. What would you do in this case?

P. S.—What veterinary book would you recommend as being most useful to a dairyman?—E. B. D., Ceres.

ANSWER BY DR. E. J. CREELY.

This is a plain case of abortion.

The United States Department of Agriculture, publishes a book easily understood by the layman, Vol. I, Diseases of Horses; Vol. II, Diseases of Cattle.

Your Congressman will probably send them to you if you write.—San Francisco Veterinary College.

[As we understand it, a charge of about 75 cents per volume is made for these books, which can be obtained from the Bureau of Documents, U. S. Department, Washington, D. C.—EDITOR.]

HORSES IN OREGON.

The most popular breed of horses in Oregon is the Percheron, according to the report of the Oregon Board of Stallion Registration just issued by the secretary, Professor E. L. Potter, head of the Animal Husbandry department of the Oregon Agricultural College. On June 30, 1913, there were 755 licenses of pure bred stallions effective in the State, 320 of which were issued for Percherons. As might be expected, Percheron grades likewise lead in this class, with 151 out of a total of 348 grades.

The next most popular breed is the Belgian, with 112 licensed stallions. In the grade class, however, this breed takes fourth place, with a registration of 23. The race for third place in the pure bred class is a tie between the Shire and Clydesdale, with 58 each. The contest is made more interesting by the fact that the same breeds are tied in the grade class for second place, with 27 each.

Other favorite breeds in the pure bred class are the Standard Bred, 93; German Coach, 54; French Draft, 29. There are but 5 Thoroughbred and 2 Shetland stallions in the State.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

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HEIFERS AND BULLS FROM A. R. O. REGISTERED HOLSTEINS.

Breeding superior in milk and fat productions.

Animals well grown and health guaranteed.

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SHROPSHIRES

Pure Bred and Registered
140 Head Yearling Rams
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QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

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BLACK LEG

LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, always fresh and reliable, they are used by over 80 per cent of California and Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials.
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Pills may be used in any injector, but Cutter's is simplest and strongest.
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Insist on Cutter's. If druggist doesn't stock, order from Laboratory.

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No matter what your difficulties are, the Layne & Bowler System will overcome them. Layne & Bowler Pumps have been subjected to the most severe tests in all fields and have proven their superiority under all conditions. They are built to meet the particular conditions under which they must work. They are the final choice of every modern pump user. They insure you continual, efficient service the entire year. For the deepest or the shallowest well—for the high or the low lift, there is a Layne & Bowler pump to do the work.

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The Layne & Bowler System will increase your present water supply. It will produce more water from a given strata and do it at less cost than other systems. The Layne & Bowler pumps are simple to install and simple to operate and they require very little attention. There are no rods, valves, plungers or cup leathers—they run submerged and require no priming. They are perfectly balanced, rigidly adjusted, compact, and highly efficient in power consumption. All bearings are enclosed from water and grit—are absolutely unaffected by sand. They eliminate the old style well pit and its dangerous troubles and are constructed so that all adjusting can be done on top of the ground. Install the Layne & Bowler System and lower your water producing cost—increase your present supply and eliminate further experiments. The Layne & Bowler service will assist you to overcome your irrigation problems. Write our irrigation and water experts for free advice.

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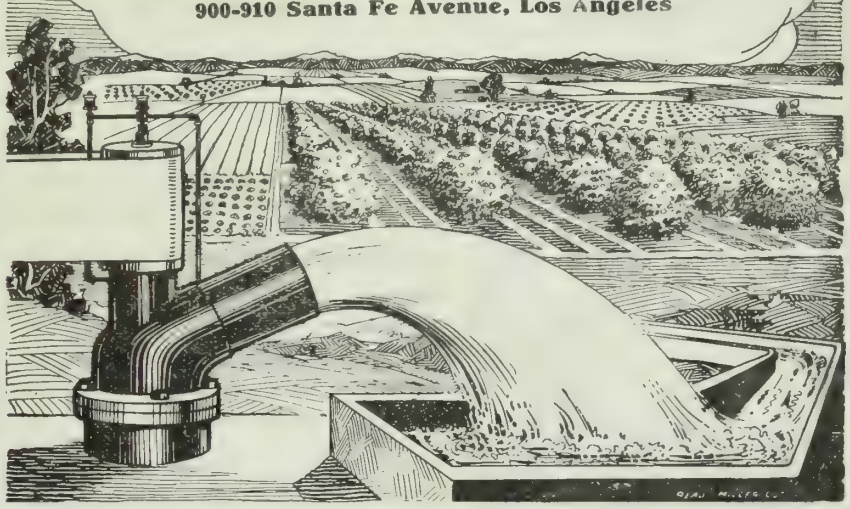

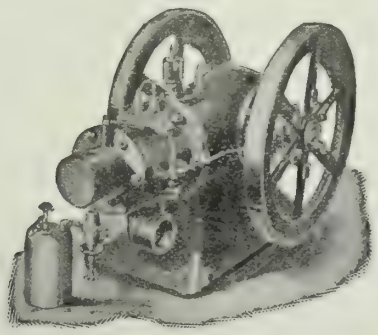

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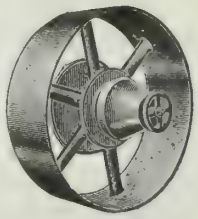
It makes no difference for what purpose the engine will be used, it will do all that is required at one-half cost and one-quarter for repairs over any other type. It is simple, reliable and efficient. Let us know what size you want.



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1st Prize Ram Lamb, Omaha, 19

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, [illegible] seconds, champion ram and ewe.
[illegible]TER-STATE FAIR, SPOKANE, WASHINGTO[illegible] five firsts, three seconds, champion ewe.
INTER-[illegible]TAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweep stakes [illegible] breeds, champion ram first and second, champion ewe first [illegible] first for flock of one ram and five ewes of any age.

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NO PIT
is required with the
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Deep Well
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You bore a hole and insert the pump in same, no matter what depth to water. Pumps are automatically water balanced and are self-aligning.

More water can be obtained from a bored or drilled well than with any other type of pump.

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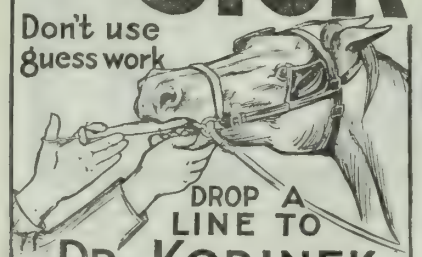
When any of your STOCK are SICK
Don't use guess work



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TERRACE, DITCH, TILE DRAIN, IRRIGATE
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SIMPLE, ACCURATE, DURABLE AND COMPLETE
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Fair Season Ends

The fair circuit for 1913 ended so far as California is concerned with the closing of the grounds at Hanford, Kings county, October 11. There may be larger fairs he d in the State, but none more entertaining, and there is none better fitted for closing the season than at Hanford as exhibitors from distant points all know that the Kings county fair is always a good one and this year was no exception.

From a livestock standpoint this fair may be said to lead all other county fairs held this year and with that feature omitted the attendance would be woefully lacking.

The beef breeds this year were small in numbers, there being on y one herd shown by T. S. Glide of Davis.

The dairy cow division brought out a good showing as they have at most other shows, the competition among the Holstein and Jersey classes being more pronounced. In the Jersey classes N. H. Locke, Royal Waltz and Brusso Bros., the two latter being from Kings county, were the contenders with N. H. Locke receiving all of the championships and firsts with his exceptionally fine show herd.

The Holstein breeders this year put up a good representative showing of the blacks and whites and the competition between T. S. Gilkerson and G. U. Clark was keen in most sections. The other exhibitors in this breed was the Floribel Land & Cattle Co., who had a number of young bulls entered.

A. B. Humphreys of Sacramento county had his herd of Guernseys entered with no competition except in one bull section where George Fanner of Kings county competed.

The Cartwright herd of Red Polled and the Steader herds of Dutch Belted made up the balance of the dairy division show.

As is usual with this fair the hog showing was good sized and of fine quality. The Poland China division was made up of the herds of M. Bassett and W. D. Trewhitt, the former getting the bulk of the awards with his well known show herd.

A. B. Humphreys and T. G. Meckfessel had their two herds of Berkshires competing which made perhaps as good a showing of that breed as has been shown outside of the State Fair this year.

The Tagus Land & Dairy Co. of Tulare county took the majority of firsts with their herd of Duroc Jerseys against the herd of J. Frank Smith & Sons and will likely be contenders in the future shows of the State.

The showing of draft horses and mules this year was one of the best ever put up by local breeders, the classes of jacks and jennets being exceptionally large and hard to judge according to J. I. Thompson of Davis who did the judging. Prof. Rubel of San Luis Obispo officiated as judge in the dairy and beef cattle divisions.

One strong feature of this fair every year is the display made in the women's department and the building set aside for that department was considered extra good this year.

Another prominent feature of this fair, good year or bad year, is the poultry exhibit and in this respect the quality and quantity were far ahead of that made in places where poultry is considered supreme.

Taken as a whole the fair was considered one of the most successful small fairs held this year and while it comes last in the season it is by no means last in quality.—J. C. L.

The La Habra Citrus Association has started construction on a new packing-house.

EXCEPTIONAL OPPORTUNITY TO BUY A FOUNDATION HERD OF
Pure Bred Jersey Cattle and Berkshire Hogs

Owing to other business, I will sell at once my herd of 16 Jerseys, partly registered, including 18 month old bull Gerties Woodland Son 106120, sired by the famous bull Gerties Son, and whose dam was Lady's Setty Victor. Also my herd of Berkshires, including 3 boars, 3 brood sows due to farrow soon, and 2 gilts. This herd produced the boar, Brinton's Longfellow Junior, champion boar at Sacramento, 1912; also got first for best boar under two years at State Fair, 1913.

Do not miss this opportunity of buying your foundation herd at reasonable prices.

Call at my ranch near town or write.

A. H. BRINTON, WOODLAND, CAL.

ONE REGISTERED
PERCHERON STALLION

2 years old, color steel gray; will make 800 to 2000-pound horse.

Also one Registered Percheron mare, 5 years old, color steel gray, for sale. Both fine individuals.

C. W VAN GELDER
Acampo, Cal.

If you're interested in Irrigation send for these Two Catalogues

ONE
fully describes and illustrates the cheapest power obtainable—The Muncie Engine. Runs on California Fuel Oil.

THE OTHER
catalogue explains the distinctive features of American Centrifugal Pumps—the pumps that give more water with less power. Write for these two catalogues, now. Address

California Hydraulic Engineering & Supply Co.
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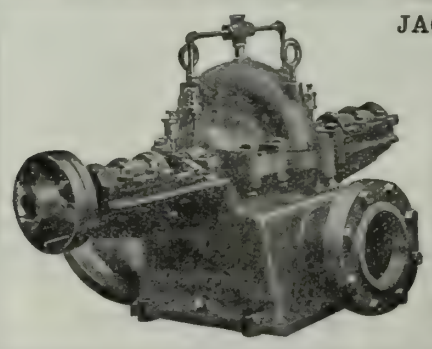

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WATER IS WEALTH

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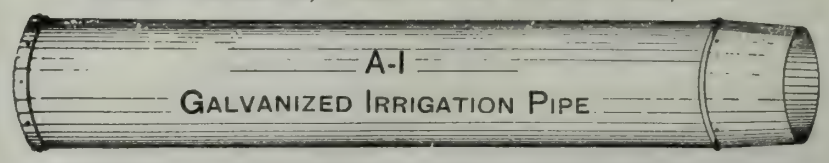
FIRST PREMIUM, CALIFORNIA STATE FAIR, 1913



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BECAUSE it is made with a lockseam set down under 3500 pound pressure, which requires no soldering to make it water tight (solder will break loose by jarring and hard knocks).

A-I Pipe was awarded first prize at Fresno and Santa Clara County Fairs in 1912.

Send for new catalog with prices and valuable information.

AMES-IRVIN CO., 8th and Irwin St., San Francisco.

Intensive Poultry Farms or Egg Factories.

[Written for the PACIFIC RURAL PRESS by MRS. SUSAN SWAYSGOOD.]

Sometimes we have enquiries as to the amount of land necessary for a poultry ranch, and this question has such a wide application that perhaps some will be helped by hearing of what is being done in other parts of the country.

Some three years ago, as near as I can remember, the poultry world was startled to hear of a man back in an eastern State named Cornell who said he had made $14,000 out of poultry in one year and did not know anything about poultry when he commenced. This was a stunner, it even beat Philo at first glance, but as he put his methods in book shape and sold the book at a good price the idea is that most of his profit came from the book. Though that is only surmise after all, it is very sure that no man ever made such profits, out of poultry alone, for it simply can't be done.

The Cornell method, however was a great improvement over the old methods of keeping the Leghorn hens in a cold country. It was conducted on the no yard plan in an intensive way. All fowls were kept under cover winter and summer, they were fed regularly and the feed was such as to give the greatest amount of nutriment with the smallest amount of expenditure of energy on the part of the hen. Of course, strict cleanliness had to be observed or the loss by deaths would have been taken off some of the profits.

The Cornells were among the first to keep as high as 1000 hens in one house, but now there are quite a goodly number of them playing the same game, and any amount that keep small numbers in smaller houses on the no yard plan. The Hayward Farm at Hancock, N. H., kept at one time from 7000 to 8000 in quite small houses out of which they never came from the time they were put in. If I remember right these men bought pullets from four to five months old, Leghorns and mixed, and put them so many in a house commencing to feed heavily until laying was started. A square foot of sprouted oats to the house furnished the noon meal and all the green feed they got of any kind, and yet these people made money.

CITY LOT POULTRY.—L. E. Kiser, tells of a poultry plant on a city lot that occupies just 25x100 feet of space. The poultry house is 20x100 feet, two stories high and has pens 20x20 holding 100 hens each. There is an office and feed room on the first floor and a room the size of one pen for storing litter, etc. There is also a cellar under that portion of the house in which the manure pit is located.

The building has a gable roof and is nearly all open on the south side. The product is all sold at the office at retail, customers calling for the eggs, which command a premium of five cents a dozen over those sold at grocery stores. No chicks are raised, 400 White Leghorn pullets are purchased each fall, and the flock is kept through two laying seasons and consists of half each of hens and pullets. When the hens stop laying in the fall they are sold dressed to the egg customers. And it is said nearly all of the product is disposed of in this way and this year the price was 20 cents a pound.

By this method the old hens came very near paying for the pullets. Mr. Kiser says "I had quite a talk with the proprietor of this little egg factory, and he told me it had proven profitable from the start." He said he "conceived the plan about the time the no yard plan was being talked of and he thought if others could keep them in confinement he could."

But this man had experience with poultry and also was a business man, and it does not matter how good a poultry man a person is if he lacks in business ability he is not going to get the best out of poultry.

But to continue, the proprietor said, 'Having conceived the idea that he could keep poultry confined and make it pay he thought there was no use in going into the country and buying up land in order to have an egg farm, so he decided to have his egg factory right in the city.'

Strict cleanliness is necessary to operate a plant of this kind. There must be no offensive odors. The dropping boards are cleaned every day. A little car runs on a trolley just beneath the dropping boards and the manure is scraped directly into it. The car also carries the litter and coarse manure when cleaning out the pens.

It runs to the end of the building and dumps into a chute where it falls into the manure pit in the cellar. This pit is cleaned out often, the manure being sold to gardeners outside the city. The pens are cleaned every eight days, one pen being cleaned each day, at which time the manure on the floor and the soiled litter is removed and fresh litter added. At every cleaning the floor is disinfected.

THE METHOD OF FEEDING.—The hens are fed a dry mash from a hopper on a platform above the floor. Scratch grain is thrown in the litter twice a day to give them exercise. There is city water and all the founts on one floor are filled by turning on a faucet. These too, are on a platform so that no litter can be scratched into them. Sprouted oats are used for greens and these are prepared in the basement.

ADVANTAGES OF SUCH A PLANT.—The advantages of such a plant are many, but the first is that the hens are, along with all the belongings, under one roof, hence a great saving in labor. Also the hens may be said to be under complete control, if one should be sick it can be caught in a minute and given proper attention, instead of having to chase half around a 10 acre lot to catch one measly hen. And having cleaned up the pen, the work is done for that time as there are no yards to spade up. Being no yards, there is no danger of soil contamination, or as we say, no sick soil. Having board floors well covered with litter is a protection to the floors, especially as they are disinfected at each cleaning time. Such pens are easily and quickly cleaned and it would be better, in my estimation if they were cleaned twice in eight days. But the greatest advantage, or the one that appeals to me as such is the fact that the produce can all be disposed of for cash without any middleman. It is these go betweens that make high costs in living. Everything we eat or wear has to pass through so many different stages of commercialism that it is done to a turn by the time the consumer gets it.

A plant of this kind would not be one-tenth the work of one with as many hens scattered in so many separate houses, or in philo coops. The philo system is good for a business man who needs exercise because he can get all the exercise needed by spading up his chicken coops before leaving for his office.

CLEANLINESS.—Intensive poultry keeping is all right as long as everything is kept clean so that disease is warded off, but there must never be any laxity in cleanliness. When small yards are used they should be kept strictly clean by taking off the top layer of dirt and replacing with fresh soil from another quarter. Unless this is done once in awhile all the spading up will not prevent trouble as at every spading some of the old dirt comes on top. When large yards grow dirty it is always best to grow a green crop in them. This purifies the ground away down, making it fresh and sweet.

Such a plant as before mentioned when kept strictly clean is not in any sense a nuisance as there are no crowing cocks to disturb people and no bad odors from yards getting wet and the sun coming down on them. In fact it would not be objectionable under any sense that I can see and it must be a boon to city people who feel that they are getting real fresh eggs. Whether it would answer in our climate or not would have to be tried out. In the east they can always rely on the winters being severe enough to destroy germs and insect life, but here we never do have weather that will make a sure job of anything so pestiferous as germs or lice.

But I would like to see it tried out and there is not much doubt but it will be in time. We have plenty of poultry plants conducted on a half way system of no yards, the yards being small and only made as a sort of sunbath affairs. And there is no doubt about the fowls using them, for all fowls like to sun themselves. This would be denied hens that were shut up in a house all times, but we can't afford to keep stock just for what they like. We keep poultry expecting to make a profit on them and this is what we must study.

POULTRY.

WHITE PLYMOUTH ROCK COCKERELS —Good birds. $3.50 each. H. S. Kirk. P. O. Box 597, Sacramento, Cal.

ORPINGTONS, BUFF AND WHITE—Summer sale of stock. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

FOR SELECTED EGGS AND CHICKS from S. C. White Leghorns, see Hopland Stock Farm advertisement.

THOROUGHBRED BLACK MINORCA SETTING EGGS. Mrs. M. Carlson, Lodi, Cal.

CROLEY'S PIONEER EGG MAKER - Makes poultry pay when egg prices are low.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal

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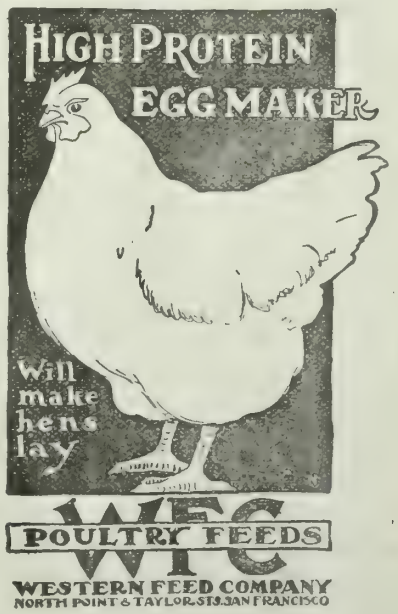

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We want the farmers of California to raise ten thousand head of choice turkeys for our Thanksgiving trade. Last year we sold fancy dressed turkeys as high as 30 cents a pound. Commence now to get your turkeys ready for the Thanksgiving market. Have them as large and fat as possible. Write us immediately how many head you will have ready for sale at this time, as we want to keep in touch with you from now on until after Thanksgiving and Christmas. Send us the names of all of your neighbors who have turkeys and about how many head each one has on hand, and we will certainly make it to your object to do so. Mark and consign all produce you have on hand to us at San Francisco.
W. C. PRICE & CO., General Produce Commission Merchants, 211-217 Clay St.

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Our chicks have no superiors and few equals. Send for list, it's free.
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R. R. 2, Box 22 PETALUMA, CAL.

The Home Circle.

Hallowe'en Festivities.

Borrow an apple and borrow a knife!
Let nobody know, as you value life,
Send the knife to its owner the very next day,
The apple cast out in the darkness away.
By the light of a candle peer into the glass,
And surely your eyes will see somebody pass.
Look at him well, for the legends say,
He will be your spouse on a future day.

Thus runs a very old tradition. From the dim recesses of antiquity, the rites of Hallowe'en have come down to our time. She is a brave maiden, who at midnight descends a cellar stair backward, with a taper in her hand, or who peels her borrowed apple at midnight; throwing the skin in a long winding ribbon over her left shoulder to the floor; the first girl carrying a mirror in her hand, is, we are told by the wizards, likely to catch in its surface, the reflection of her future husband's countenance. The second, she in her dusky chamber, with apple and the knife will have the same reward for her labor. She who sees nothing may perhaps be destined by an unkind fate to become an old maid. In the past, spinsterhood was a terrible spectre and it appalled young girls. They are not afraid of it in these days. No, indeed!

* * *

Hallowe'en is a time for mirth and laughter, coming in the crisp cool end of October, and the very dawn of November too, for the festive scenes are not over until the break of day.

The harvest moon and the hunter's moon are both forgotten glories now. It is the moon of lovers which presides over the days nearest Hallowe'en. Moonlight or darkness are the same, when Cupid is bending his bow.

In all seriousness, a girl is in her right who sometimes lets her fancy play about the unknown man who may one day be her husband.

Every girl should have her ideal. She should picture to herself the sort of man who would be a good comrade on her road; a man free from small and mean aims and motives, a man whom it would be safe to trust, for the hard places as for the smooth, a man thoroughly honorable and pure with a clean record.

Foolishly sentimental young women often make a hero of a man who has gone wrong; who drinks, gambles and tells lies. They are ready to pardon his faults, and condone his vice, weaving their romantic and silly notions around the man, who is in plain terms unworthy and a scoundrel.

* * *

If you are to give a Hallowe'en party for the boys and girls, nothing will make more appropriate and effective decorations than branches of autumn leaves.

Next best to gathering autumn leaves is the pleasure of making them. Every spare day in the next two weeks can be filled with the pleasant occupation of concocting artificial foliage for the Hallowe'en decorations.

Collect a number of natural branches. They are not hard to find with fall pruning in order. To them wire leaves and smaller branches made of paper.

For the foundations of the leaves have rolls of plain colored crepe paper, green, yellow or brown, and cut in the shape of oak, maple and ash leaves.

Spread the cut leaves on an old table top and quickly brush over it a large paint brush dipped in red, yellow and green water colors and a touch of gilt. With a little practice, charming color effects can be achieved. In parts the brush is used as a stipple to give the mottled look of the autumn foliage.

Let the leaves remain on the table to dry. They will shrivel a bit, but that makes them all the more natural. Wire to the branches, copying closely the formation of the special leaf represented. Use over the doors, windows, in odd corners, anywhere that one does not get too close a view. If well done, the effect is surprisingly natural.

Besides the branches, make plenty of single leaves with wire stems, covered with brown paper. These can be festooned on the lower part of the tablecloth to form a border or to be used to decorate the various Hallowe'en favors.

Such a realistic autumn leaf crepe paper can now be bought by the roll that the lazy worker can cut the foliage from it and get good results, if not quite so natural as with a clever brush.

* * *

All that is preliminary to the really important feature of the affair—the supper. What shall you have and how shall it be prepared?

Well, there are two kinds of menus to choose from, and both are good. One is a big hot supper which will include oysters, creamed or stewed; bread and butter, spread in advance, or hot biscuit, and these may be followed with a big dish of fried or broiled chicken, and the supper may wind up with ice cream. A good supper this is, and it will be declared satisfactory by all who partake of it.

* * *

The other bill of fare is different. This may consist of baked beans of the really old-fashioned kind—not the sort which come in a tin can or are bought at a delicatessen shop, but the kind "like mother used to make." With these brown bread must be served, as a matter of course. Home-made pickles must be on the table. Will it be thought "too much richness" if I advise also a dish of small, spicy sausages? I know the beans should be substantial and appetizing enough for any one, but it is a melancholy fact that not every one cares for beans, and these heretics will relish the sausages with their brown bread.

* * *

After such a beginning as this, ice cream or other fussed up sweets would be out of the question and in the dessert you may strike the note of harvest home again. Have apples, pears, grapes, nuts and perhaps a big pitcher of sweet cider as well as hot coffee. This repast is more easily prepared than the other, and demands less time at the last moment, since practically all its items may be made ready in advance with the exception of the sausages,—if you are sure of your guests tastes, it may not be necessary to have these. Or in their stead, you may serve a plate of ham sliced to wafer-like thinness.

Whether you have the first supper or the second, one feature you must have and that is the luck cake. This is in ordinary loaf of cake containing a dime, a ring and a thimble. Don't make the mistake perpetrated by one woman I know who mixed all three articles with the cake batter and baked them in! After your cake is baked and cold, turn it over, make an incision with a knife in the bottom and push in carefully the three small articles which are to determine the fate of their finders. The one who wins the dime is to have a wealthy husband, the person who draws the ring is to be engaged or married within the year, the unfortunate who gets the thimble is doomed to a life of single blessedness!

* * *

This cake may be of any sort you choose, a good white or gold cake, or a loaf of pound cake answers well. It may be iced or decorated to please you and should not be cut until after everything else.

One feature of the Hallowe'en supper which may be considered to come within the province of the housekeeper is the dish of snapdragon and if your young people have not planned for it, you may reserve it as a surprise, to be brought on at the same time as the cake. It is easily prepared. A large shallow dish should hold it and in this may be placed various items which serve as symbols of certain vocations or fates. For instance, a raisin, a fig, a piece of candied ginger, nuts of different kinds, etc. Just before the dish is brought in alcohol may be poured over its contents and set on fire. The trick is for the guests to snatch from the blazing fluid what they can, and their winnings will indicate their future. "A fig for your chances" will suggest itself to the one who gets the fig, the ginger points to the possessor of a hot temper, the raisin or bit of crystalized fruit denotes sweetness—and perhaps insipidity—the nuts may stand for a hard nut to crack or may intimate that the one who gets them is to be a traveler to the country where the nuts come from. All sors of amusing interpretations may be read into the game and it is sure to provoke merriment.

* * *

Make your plans for the Hallowe'en festival as though the verdict to be delivered by the Fates were as valuable to you as the children think it is to them. Arrange for all the good old-time tests—the burning of nuts, the lighted candle and the mirror, the bobing for apples and all the attendant ceremonies. One of

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these is the dough cake, when cornmeal and water are mixed to a paste, balls made of this, each containing a tiny roll of paper inscribed with some fortune or initials. As each of these balls is dropped into water it breaks open and displays its contents. To the anxious eyes of the one who reads it his or her future is thus revealed.

Or you may secure lead to melt and drop, a little at a time, into the cold water. When the hot lead touches the water it assumes shapes which the imagination can easily convert into a forecast of the future occupation of the husband, if the one making the test is a girl, of his own vocation in life, if the one trying the fortune be a boy.

Wherever you are you may try the fate of the floating needles. Grease ordinary needles, and after filling a basin with water, lay a piece of tissue paper on the surface and place the needles on this. In a little while the paper will soften and sink and the needles will continue to float, giving by their action prophecy to the different persons who have placed them there. Some will float about independently, some will cling to one another, others will drift to the side of the basin and stick there. You will find place for plenty of entertaining interpretations of their conduct and vagaries.

One of the orthodox ways of winding up a Hallowe'en party is for all to sit about in the firelight and tell ghost stories—although this form of diversion is not to be commended when small children are among the audience. But for well-grown boys and girls or for older people the risk of "creeps" or scariness following the performance is comparatively small and the enjoyment and fun will be worth while.

Eggs as Food.

Instances of egg poisoning appear from time to time in papers, and the subject is referred to in works of dietetics. Infants and young children digest eggs with difficulty, and many more are made ill if this particular food is partaken of too freely, or, in the case of other children, if the egg diet is kept up too continuously. In some persons eggs always act as poisons, while in others the toxic influence may be marked at one time and at another entirely wanting. The susceptibility may be observed in eggs of every degree of freshness, and in some cases only with the eggs of certain birds. Changes in eggs may also be brought about by methods of cooking; for, while some perhaps manifest their susceptibility only when the egg is raw, others are poisoned when it is cooked or prepared in some unusual manner.—Family Herald.

Tit for Tat.

Amusing evidence was given at Westminster Court, London, recently when a dairyman by the name of William Henry Gannaway was arraigned on the charge of selling adulterated milk.

The funny part of it was that John Healy, who bought the milk, testified that he was quite satisfied with the milk that Gunnaway sold him.

"Satisfied with 17 per cent of water?" asked the prosecuting attorney.

"I am not particular," was the reply. "You see I supply the defendant with fish. He never complains of my fish and I don't want to complain of his milk. It's a fair exchange."

"It comes to this, then," said the prosecuting attorney, "you give him a little doubtful fish for his very doubtful milk."

"That's it," agreed Healey.

As soon as one can do so after receiving a bruise apply a cloth wrung from hot water and repeat the application frequently.

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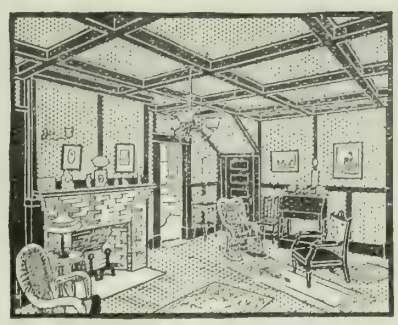

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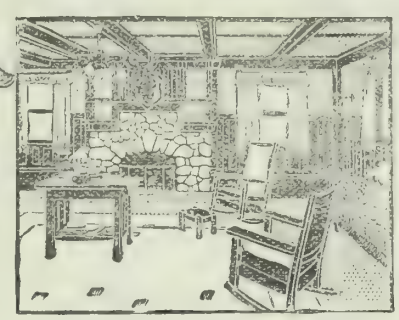

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Rialto Building

SAN FRANCISCO, CAL.

East Side Version.

If you invent a really good joke, it stands a fair chance of coming true. One of the best Du Maurier ever did, that of the small boy, the porter, and the grandfather's clock, had itself almost repeated in Stuyvesant square the other day.

In Du Maurier's joke, the porter is staggering along under the weight of a huge grandfather's clock which he had been employed to deliver. A small guttersnipe hails him.

"I say, mister," he asks, "wouldn't you find it more convenient to carry a watch?"

So Punch had it. The scene is now in Stuyvesant square. A janitor is making small headway under the burden of a chiffonier, which he is carrying on his back. A boy on roller skates goes by.

"Say, bonehead," he yells, "hire a room and then youse won't have to pack your clo'es aroun' wid youse!"—New York Evening Post.

Use for Fish Scraps.

Save all bones and trimming from any fish you may use; next scratch dirt away from sickly bush or flower, bury the fish scraps next to the roots, then cover and watch the plant take a new hold on life; also save all bones from soup meats and roasts; crush with stone or hammer; this is fine to put under small shrubbery or shade trees.

Examining Magistrate—Madam, you persistently deny that you committed this act, though the description of the culprit fits you exactly—beautiful face and figure, extremely youthful appearance, most attractive——. The Defendant—You honor, I confess all—yes, it was I—Judge.

Lack of Realism.

Mr. Exe—What ridiculous, impossible things these fashion plates are!

Mrs. Exe—I know they used to be, but today many of them are engraved from photographs.

Mr. Exe—Well, this one can't be. Here are two women going in opposite directions, both with brand new gowns on, and neither looking back at the other.—Boston Transcript.

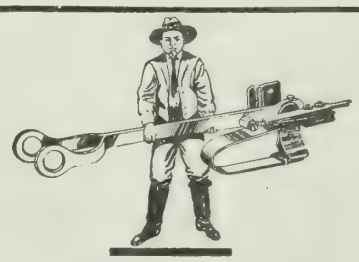
Boarding House Repartee.

He was one of those fresh young fellows given to the use of bromidisms and stale slang. At the breakfast table, desiring the milk, he exclaimed: "Chase the cow down this way, please."

"Here, Jane," said the landlady, "take the cow down to where the calf is bawling."

As a complexion improver, fresh air and exercise have no equals. They will bring normal appetite and digestion and arouse the most torpid liver to a sense of its responsibilities. Whenever it is possible, outdoor exercise is by far the best, and there is none so generally desirable as walking. From two to five miles a day of brisk walking is little enough for the average woman.

The French medical press remarks that wine drinkers in the proportion of 1 in 200 suffer from appendicitis, whereas those who stick to water are affected in the proportion of 1 in 10. Professor Jalaguier warns against the use of mineral water, cider and beer, and advocates the grape juice of biblical fame.



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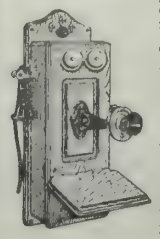

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KELLOGG SWITCHBOARD & SUPPLY CO.

86 3d STREET, SAN FRANCISCO, CALIF.

THE MARKETS.

San Francisco, Oct. 15, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There is a good deal of wheat coming in from the North on orders from the millmen all the time, but business in the local market is quiet. The market is rather easy, and a slight decline in the North is reflected in the local quotations.

California Club, ctl	$1.47½@1.50
Forty-fold	1.47½@1.50
Northern Club	1.47½@1.50
Northern Bluestem	1.65 @1.67½
Northern Red	1.55 @1.70

BARLEY.

The speculative market is quiet and easier, and there is little activity in the spot grain at present, though prices are pretty firmly held.

Brewing and Shipping	**$1.40 @1.45**
Choice Feed, per ctl	**1.35 @1.40**
Common Feed	**1.30 @1.35**

OATS.

Feed oats are moving in about the usual jobbing way, but white oats are somewhat lower. Seed grades have so far received very little attention except in a speculative way, and are rather easy, but a rain would probably cause an advance.

Red Feed	**$1.65 @1.85**
Seed	**2.25 @2.30**
Gray	**Nominal**
White	**1.50 @1.55**
Black Seed	**2.75 @3.25**

CORN.

Arrivals are light and there is not much movement of any description locally, values being little more than nominal.

California Yellow	**Nominal**
Eastern Yellow	**$1.95 @2.00**
Eastern White	**Nominal**

RYE.

Recleaned stock for seed is not yet moving very freely, though held steadily at quotations. Otherwise the market is featureless.

Rye, per ctl	**$1.45 @1.50**
Seed	**1.65 @1.70**

BEANS.

The bean market continues to gain strength. Few changes in price are noted this week, but bayos have taken quite a jump, and blackeyes have again been marked up slightly, while there is a firmer feeling on most varieties. Trading is fairly active, the shipping demand having opened up in good shape, after some delay at the start. The new crop is coming in freely from the country, but there is nothing to indicate that offerings will exceed requirements. A review of the southern lima bean crop indicates lighter production than was expected, being rather short in most districts.

(On wharf.)

Bayos, per ctl	$3.50 @3.70
Blackeyes	3.80 @4.00
Cranberry Beans	**3.75 @4.00**
Horse Beans	1.90 @2.10
Small Whites	**5.00 @5.25**
Large Whites	**3.10 @3.25**
Limas	**4.75 @4.85**
Pea	**Nominal**
Pink	**2.75 @2.85**
Red Kidneys	3.40 @3.50
Mexican Red	**3.40 @3.65**

SEEDS.

There is not much demand for anything at present, though it is believed that a good rain would bring a large movement of alfalfa and several other lines, which are accordingy rather firmly held.

Alfalfa	12½@15 c
Broomcorn seed, per ton	**Nominal**
Brown Mustard, per lb	**3¾c**
Canary	**7 @ 7½c**
Hemp	**3 c**
Millet	**2½@ 2¾c**
Timothy	**Nominal**
Yellow Mustard	**Nominal**

FLOUR.

Cal. Family Extras	**$5.60 @6.00**
Bakers' Extras	**4.65 @5.20**
Superfine	**3.90 @4.10**
Oregon and Washington	**4.90**

There is not much feature to the market, as the local movement keeps up on about the usual scale, and there has been no change in prices for some time. Export business here is very quiet.

Hay and Feedstuffs.

HAY.

Arrivals are running about the same as for the past month, and the general situation shows very little change, indications being that there will be little feature to the market until after the first rain at least. Arrivals, however, may decrease still further, as the fields are well cleaned up. Current shipments are coming mostly from the river district. The local trade continues very quiet, with no real demand except for strictly wheat and oat hay. Alfalfa is still in free supply, with large offerings from many producing districts, but there is very little demand locally, and what there is is supplied with river hay.

No. 1 Wheat, or Wheat and Oat	**$15.50@16.50**
do No. 2	**14.00@15.50**
Lower grades	**13.00@14.00**
Tame Oats	**14.50@16.50**
Wild Oats	**12.00@14.50**
Alfalfa	**10.00@13.00**
Stock Hay	**9.00@10.00**
Straw, per bale	60@ 80c

FEEDSTUFFS.

The only change this week is on rolled oats, which are slightly lower in sympathy with the whole grain. The surplus offerings of bran have been pretty well cleaned up, and prices are steady as last quoted, other lines standing about as before.

Alfalfa Meal, per ton	**$18.50@19.50**
Bran, per ton	**25.00@26.00**
Oilcake Meal	**34.00@35.00**
Cocoanut Cake or Meal	**29.50@30.00**
Cracked Corn	**42.00@43.00**
Middlings	**33.00@34.00**
Rolled Barley	**29.00@30.00**
Rolled Oats	**33.00@34.00**
Shorts	**27.00@28.00**

Garden Truck.

VEGETABLES.

The supply of onions is now rather closely held, and after the large speculative buying of the last few weeks the market has quieted down. Some of the best lots are held a little higher, but most sales are made within the old range. In several lines of summer vegetables values are stiffening up a little, with diminishing supplies, though it will be some time before the crops are cleaned up. Tomatoes are rather plentiful and a little lower than last week, though higher than a few weeks back. Green peppers are a little easier, while eggplant, okra and summer squash are offered in smaller quantities and show quite a sharp advance. String and lima beans also are higher, supplies being smaller than for some time past.

Onions: New Yellow, River, ctl	**$ 1.25@ 1.45**
Garlic, per lb	6@ 8c
Cucumbers, per box	50@ 75c
Green Peppers, box	20@ 50c
Carrots, per sack	65@ 80c
Green Peas, lb	5@ 6c
String Beans, lb	3@ 5c
Summer Squash, lug box	65@ 85c
Green Corn, choice, sack	1.00@ 2.25
Okra, box	30@ 65c
Tomatoes, box	25@ 75c
Eggplant, box	65@ 70c
Lima Beans, lb	4@ 5c
Sprouts, lb.	3@ 4c
Celery, doz.	30@ 40c
Rhubarb, box	70c@ 1.25

POTATOES.

All lines are fairly firm, with the river crop cleaning up and considerable Oregon stock coming in. Fancy Salinas stock is a little higher, other lines standing about as before. Sweets have stiffened up, as first-class stock is rather scarce and closely held.

Salinas, ctl.	$ 1.75@ 1.85
New River Whites	75c@ 1.10
Sweet Potatoes, per ctl	1.25@ 1.60
Oregon Burbanks	1.25@ 1.30

Dairy Produce.

POULTRY.

The Jewish holiday helped out the market last week, but the demand has dropped off a little now, and at the same time arrivals of Eastern stock this week have been extremely heavy, with a large proportion of young chickens. This has naturally caused a depression in the market for California chickens, which move off slowly at easy values. Large broilers, fryers and roosters are all quoted lower. Dressed turkeys are in good demand, choice offerings bringing a sharp advance.

Large Broilers, per lb	22 @23 c
Small Broilers, per lb	24 @25 c
Fryers, per lb	21 @22 c
Hens, extra, per lb	18 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	11 @12½c
Young Roosters, per lb	22 @23 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	2.00@ 2.50
Ducks, doz.	4.50@ 6.00
Turkeys, live, per lb	24 @25 c
do dressed	27 @30 c

BUTTER.

Butter continues to weaken, extras being 1½c below last week and still easy, though lower grades are fairly steady as before. Dealers are apparently reluctant to stock up, owing to conditions in other markets and a prospect of shipments of Australian butter.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	33½	32½	—	32	32	32
Prime Firsts	30	30	—	30	30	30
Firsts	29	29	—	29	29	29

EGGS.

Egg prices are still advancing, extras showing a gain of 1c for the week, while pullets have been marked up sharply. The demand is keeping up in good shape, while supplies have fallen off considerably. Extras are about 10c higher than at the same time last year.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	48	48	—	49	48½	49
Selected Pullets	35	35½	—	36½	41	42

CHEESE.

Flats have stiffened on lighter offerings and are 1c above the last quotation. Y. A.'s and Monterey cheese are firm as last quoted.

Fancy California Flats, per lb	17 c
New Young Americas, fancy	16 c
Monterey or Jack Cheese	17 @18 c

Deciduous Fruit.

The apple market is the matter of most interest at present, as the marked curtailment of the bellefleur crop has caused a sharp advance in the price at Watsonville, resulting in a corresponding rise in local prices. Other varieties stand about as before, and the change has greatly curtailed the demand for bellefleurs, other lines getting the benefit. The increased demand for Oregon stock is quite noticeable. Cranberries are moving well, but the demand for other lines is rather light. Strawberries and raspberries show a little more firmness, and huckleberries are less plentiful. Peaches have recovered from the slump of last week, and with light offerings of good stock prices are well maintained. Plums, figs, and quinces are also a little higher, with only moderate demand and limited supplies. Black grapes in lugs and Isabellas are higher, but other grapes stand as before, with a good steady demand. Wine grapes have been scarce and in strong demand; choice Zinfandels bring up to $30, though $28 is now top price.

Strawberries, chest	$ 2.50@ 4.75
Blackberries, chest	2.50@ 4.00
Raspberries, chest	4.00@ 6.50
Huckleberries, lb.	4@ 8c
Cranberries, Coos Bay, box	2.25@ 2.50
Cape Cod, bbl	8.00@ 8.50
Apples: Baldwins	1.00@ 1.25
Spitzenbergs	1.00@ 1.40
Greenings	75c@ 1.10
Bellefluer	1.20@ 1.70
Newtown Pippins	1.15@ 1.50
Common	50@ 75c
Pears, Bartlett, box	1.75@ 2.25
Other varieties	75c@ 1.50
Peaches, box	40@ 55c
Carriers	70@ 90c
Plums, crate	85c@ 1.00
Figs, double layer, drawer	40@ 85c
Cantaloupes, River, lugs	75@ 1.50
Watermelons, per dozen	1.50@ 2.50
Grapes: Seedless, lugs	1.25@ 1.75
Malaga, crate	50@ 65c
Muscat	45@ 75c
Black, lugs	60@ 75c
Tokay, lugs	75c@ 1.00
Cornichon, crate	65@ 75c
Isabella	75c@ 1.00
Quinces, box	50c@ 1.00
Pomegranates, box	50c@ 1.00
Persimmons, box	1.00@ 1.50

Dried Fruits.

Raisins are attracting more attention than anything else at the moment. The demand has not been especially active in consuming markets, but with a marked shortage in production local buyers are anxious to secure supplies, and the Associated company has raised its offer to 4c for Muscatels, and made a corresponding advance in seedless. Other lines are getting pretty well cleaned up, and while there is no great activity values are very firm. Fancy apples have again been marked up, and packers have made a sharp increase in their offers for figs, of which few are offered. Large prunes also are in strong demand. The demand in consuming markets seems to be picking up a little, and considerable business has been done in the Middle West. New York buyers, who have been holding off, are beginning to appreciate the situation, and more inquiry is expected from that quar-

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Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

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WANTED—Place as superintendent; advertiser is thorough in all lines of farming, fruit growing and irrigation; experienced in working all kinds of labor. Box 17, Pacific Rural Press.

WANTED—Successful and responsible farmers to act as local representatives in sale of best California farm lands. For particulars, address Box 5, Pacific Rural Press.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

WANTED—Burbank standard cactus leaves; highest prices paid. Address Sempervirens Cactus Farm, Santa Rosa, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

LAND FOR SALE.

I represent a tract of land now being divided. It is in Tulare county with foothill protection on three sides. The soil is choice, without trace of alkali. Water is obtained at 100 feet with a lift of 15 to 25 feet. Electric power is cheap. A new railroad is now building through the tract and a new town site will soon be dedicated. No portion of the tract will be more than three miles from railroad station and packing house. 20 acres of this land can be made to yield an income of $2000 to $4000 annually. 10 acres can make a good living for a family. The price averages about $150 to $160 an acre—some lots lower, a few lots higher. We ask cash payment of one-fourth the purchase price, then wait six years for the balance. Low interest. Send for our illustrated booklet with map. There are special reasons why you should buy in the next six weeks—ask me why. W. P. McKEE, 546 Title Insurance Bldg., Los Angeles.

FOR SALE—60 acres near Newcastle, Cal.; 12 acres in trees and vines under ditch; 23 acres in Zante currants (my currants took first prize at Seattle Exposition); 7 acres hay land, and 8 acres timber. Good house, barn, chicken house, packing house, etc. Completely stocked with implements, wagons, etc., including a good team of horses and harness. For particulars, price, and terms, write S. Hossli, Newman, Cal.

LAND AND WATER—$100 per acre. Complete irrigation; Sacramento valley, level; 10 to 100-acre tracts; terms; direct from owners. WATT & CO., 621 Jay St., Sacramento, Cal.

FOR SALE—20 acres, Merced county, orange, fruit land, good soil. R. AXTELL, McCormick, Wash.

TREES AND NURSERY STOCK

Fruit Trees, Berries and Small Fruits; acreage planting a specialty. Roses, Bulbs. Lists ready. H. A. HYDE, Watsonville Nurseryman.

MISCELLANEOUS

AUSTRALIA

SPECIAL LAND SEEKER'S EXCURSION NEXT NOVEMBER to Victoria, Australia. Early reservation of berths desired. Reduced steamship passages and free rail travel for inspection. GOVERNMENT OF VICTORIA WANTS SETTLERS and offers unusual opportunities. Lands suitable to all requirements, exceptional terms. Free particulars from F. T. A. FRICKE, Government Representative (from Victoria), Box W, 687 Market St., San Francisco.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin, it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco

FOR SALE—One Benicia disc plow, 4 eights, cutting 32 inches; can also be used as 2 or 3 disc, each cutting 8 inch; used two months. One Economy cream separator, small size, for 6 or 8 cows; used one year. Jesse L. Dargitz, Lodi, Cal. Phone Lodi 33F14.

To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay Ct., San Francisco.

ALFALFA HAY—I have some No. 1 alfalfa, and it will pay you to write me for prices before buying. W. G. COPPERNOLL, Gridley, Cal., R. D. 1.

AIR-SLACKED LIME, FERTILIZERS. H. B. Matthews, 733 Merchants Exchange Bldg., San Francisco.

FOR SALE—Good registered Berkshire boar. Ayers Botts, Acampo, Cal.

ter soon. The New York Journal of Commerce says:

"Advices from all producing quarters continue to reflect a strong feeling among sellers of dried fruits, whether growers or packers, based on short crops of all varieties. It is figured by competent authorities that this season's supply will be less than half of the quantity production, though the percentage of decrease in some lines is less than that of others. The situation in evaporated apples is of interest to the handlers of California dried fruits, especially of prunes, as the competition between apples and prunes, as the two varieties of largest production and consumption, is always pronounced, and seasons of decided shortage in one or the other are marked by a decided increase in the demand for the one that is in largest supply and consequently cheaper. It happens this year that crops of both prunes and apples are decidedly short, with the greatest shortage, however, shown by the latter, and prunes, therefore, in spite of the fact that prices are far above normal, are expected to get a decided advantage in consuming quarters for this reason. According to current report, the pack of apples in New York State will be less than 33⅓% of the 1912 output, because of the high cost of evaporating stock due to the light crop. Many of the evaporators are not operating, and a number, it is said, will not start their evaporators this season. Added to this, a heavy shortage is said to exist, and the shorts have run the market up very decidedly in the past few weeks in an effort to cover, which has been only partly successful, and then only by the payment by them of prices considerably above those called for by their contracts with consumers. Several of the bigger operators, it is said, have paid substantial premiums to buyers for cancellation of contracts.

"A factor in Califorina dried fruits, and one who is in close touch with the apple situation, sized up the statistical situation recently by giving a comparison of the probable available supply from 1913 crops, based on the highest estimates he had obtained from responsible sources with the tonnage produced last year. The table he presented was as follows:

	Tons 1912.	Tons 1913.
Prunes	100,000	45,000
Apricots	19,000	8,000
Peaches	28,000	16,000
Apples (New York)	38,000	12,000
Total	185,000	81,000

"In addition to this, 95,000 tons of California raisins were produced in 1912, while this season's crop is figured at about 55,000 tons. A further argument used to emphasize the strong position of dried fruits is found by the bull element in the short crops of green fruits and the higher prices commanded by the several varieties, particularly apples, which, according to previous experience, should turn the attention of consumers more largely to dried fruits. There appears to be no carry-over 1912 of California dried fruits in the hands of packers. According to the best information, whatever carry-over there is on the Coast is controlled by growers, who are more than ever independent of current market conditions and strong enough financially to carry what they have until consumers, through the distributers, are ready to pay their price."

Evap. Apples, 1913	6½@ 8 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4½c
Black	2½@ 3½c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4¾@ 5 c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4¼c

Citrus Fruits.

Local prices show no change worth mentioning, and business is rather quiet at the moment, though a more active demand is expected within a few weeks.

Oranges (per box):	
Valencias	$ 4.00@ 6.00
Grapefruit, seedless	5.50@ 6.00
Lemons	4.50@ 7.50
Limes	10.00@12.00

Nuts, Honey, Hops, Etc.

NUTS.

Almonds are already pretty well sold out, and walnuts are beginning to receive more attention, though many buyers hesitated on account of the unusually high prices. Deliveries are beginning to go forward from producing districts.

HOPS.

The California crop has turned out slightly below normal, but of excellent quality. Trading has been rather quiet since the heavy sales of a few weeks ago, and the range of prices has narrowed somewhat, though many growers are hopeful of a further advance. A revival is reported in the Oregon market, with large sales around 23 cents.

1913 .....23@25c

HONEY.

Offerings here are moderate, keeping values fairly steady, though the distributing trade is fairly well supplied for current needs and there is no large demand.

BEESWAX.

There is very little business at present, but prices are firmly held as for some time past.

Light	30 @32 c
Dark	28 @30 c

Live Stock.

Quite a lot of Australian beef has come in, and while the amount is relatively small as compared with market requirements, it has caused a little easier feeling. Stockmen are holding firm, but there appears to be more selling than for some time past, though the local market remains about as before. Calves are extremely firm, with very few coming in, and sheep are also firm, though hogs are more plentiful than for some time past.

Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	8¼@ 8½c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4 @ 4¼c
Ewes	3¼@ 3½c
Lambs: Suckling	5¼@ 5¾c

DRESSED MEATS.

Steers	12¼@12¾c
Heifers	11½@12½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

Reports from the East of late have been somewhat reassuring, but the local market continues dull, with growers holding the fall clip above the views of local buyers.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

All lines of salt hides show a sharp advance, and are firmly held at the new level. The output from local slaughterhouses is sold for the rest of the month, and buyers are loking for country hides, offerings of which are limited.

Heavy Steers, over 56 lbs.	15½c
Medium	15 c
Light Steers, under 48 lbs.	15 c
Heavy Cows, over 50 lbs.	15 c
Light Cows, 30 to 50 lbs.	16 c
Kip	13½@15 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	26 @27 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.75
Medium	2.25
Small	1.00
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

Prices are not very well established, as there have been few horses of desirable quality offered here lately. The last large lot of country stock consisted mostly of mediocre animals, for which there was very little demand, and the prices realized were very disappointing, though it appears that light draft stock of desirable type will bring somewhat better than the last quotation. Better prices are expected in other lines as soon as the quality of offerings improves, but the market is not in a condition to attract very large offerings of any kind.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs.	100@150
Wagon Horses, 1250 to 1350	100@125
Delivery Horses, 1050 to 1250	75@100
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

Among our new advertisers in this issue is the Hardie Sprayers. Theodore Poindexter has been the State agent for the past three years. Business has grown and so has the firm, which this year will be Poindexter & Snitjer. Look up their ad.

Many times we have heard the suggestion made that the State Fair should be held at San Francisco to secure the attendance it deserves. This week the California Land Show is being held in this city, and by the large crowds in daily attendance one is led to the belief that if the livestock shown at the State Fair could be brought here next year to be exhibited at the Land Show that great good would be accomplished. The exhibits by counties and individuals of horticultural and mechanical products are very fine and deserve the great patronage being given.

Albert F. Etter, of Humboldt county, arrived at our office this week, and before he leaves we expect to get from him the story of his work during the past year. He reports continued success with his strawberries and also that one of his apple tree varieties has proven good. Mr. Etter is doing great work in horticultural lines and he is destined to great things in the future. We believe our readers will be pleased to read the story that we hope to print shortly.

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is rendered practicable and profitable to both large and small irrigators, private and municipal water companies, manufacturing plants, etc., by the use of the Pomona Deep Well Pump—the acknowledged standard by which all others are judged.

Before placing your order for deep well equipment, you will find it to your advantage to thoroughly investigate the Pomona Deep Well Pump. To enable you to do this to your satisfaction, we invite you to come to Pomona and see at first hand the way the Pomona pump is made—the high grade of all materials that enter into its construction—the attention that is given to minute details which may seem trivial at first glance, but really are of immense importance. We would like the opportunity of consulting with you personally as to your particular requirements and we feel that you will be well repaid by a visit here whether you decide upon purchasing a Pomona pump or not, for Pomona is the center of the largest deep well irrigation district in the world. Our experts will be glad to advise with you—free of charge.

The 1913-1914 issue of our pump catalogue is just off the press. A copy will be sent free on request to any address. When writing, ask for "Catalogue No. 54P" and mention the depth of your well and any other details that you may wish to have answered.

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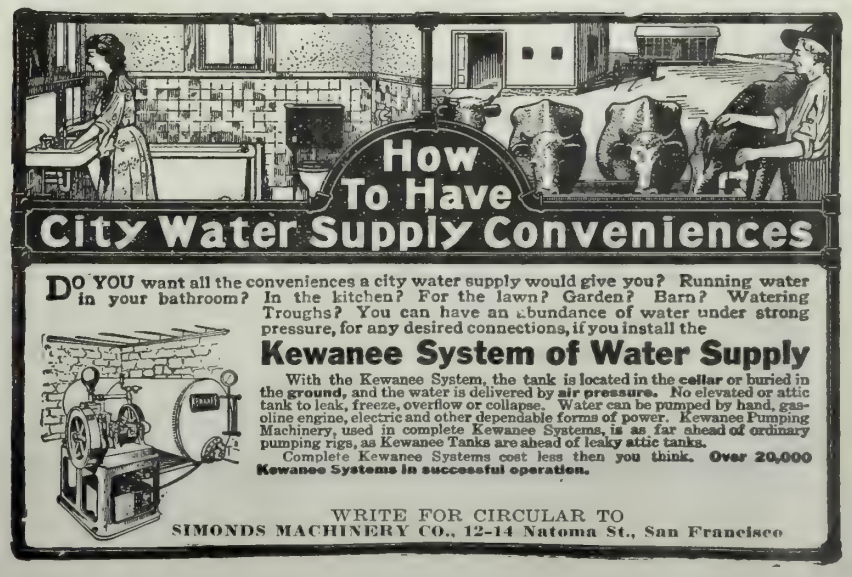

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SURELAY is a plain everyday food—a balanced ration comprising a ground mixture of all the principal grains; also meat, blood, dry bone and gluten feed.

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The Sperry Flour Co. does not employ specialty salesmen for poultry foods. For this saving in expense we give you an actual refund. Will you ask (on a postal card) for our booklet? It will conclusively show you how to reduce your chicken **feed bill at least 7½ per cent.**

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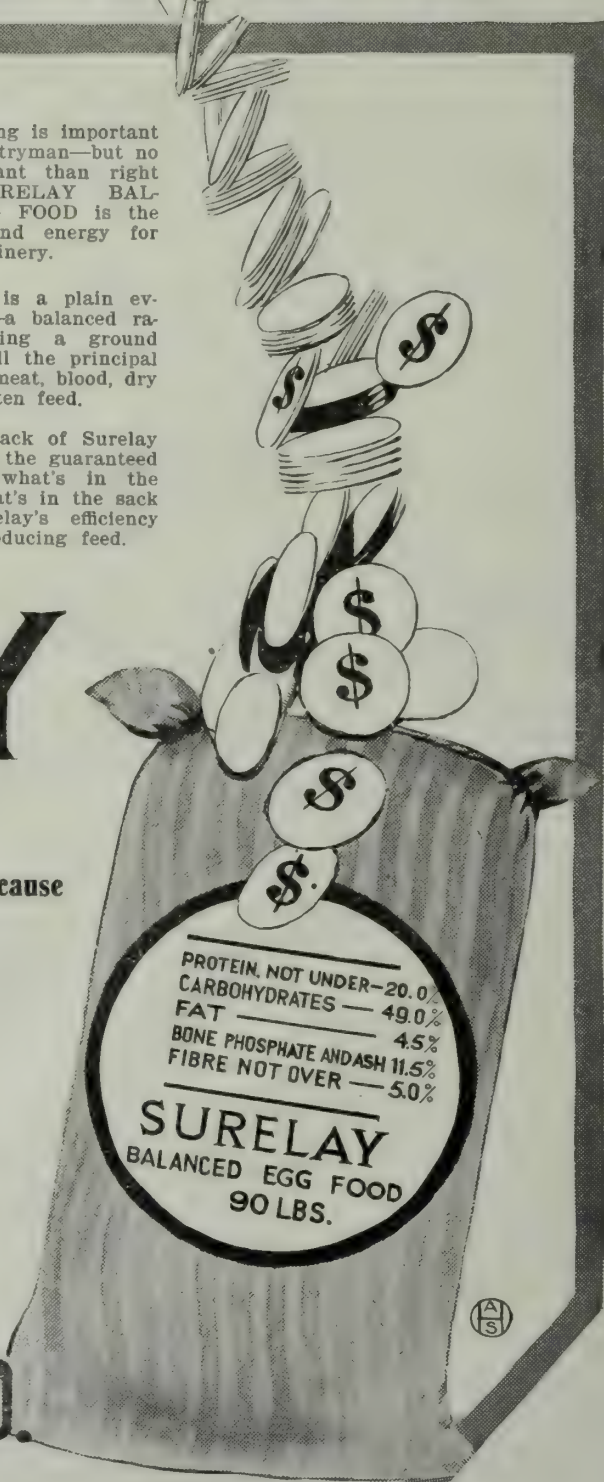
You ought to have our book, "Makes Hens Happy." It's full of valuable poultry information. Write for it to-day.



Dept. R.P.

Stock & Poultry Food Dept.

SPERRY FLOUR CO.

Stockton, Cal.

THE PACIFIC RURAL PRESS

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State Library

Apricots in the Winters District.

[BY THE ASSOCIATE EDITOR.]

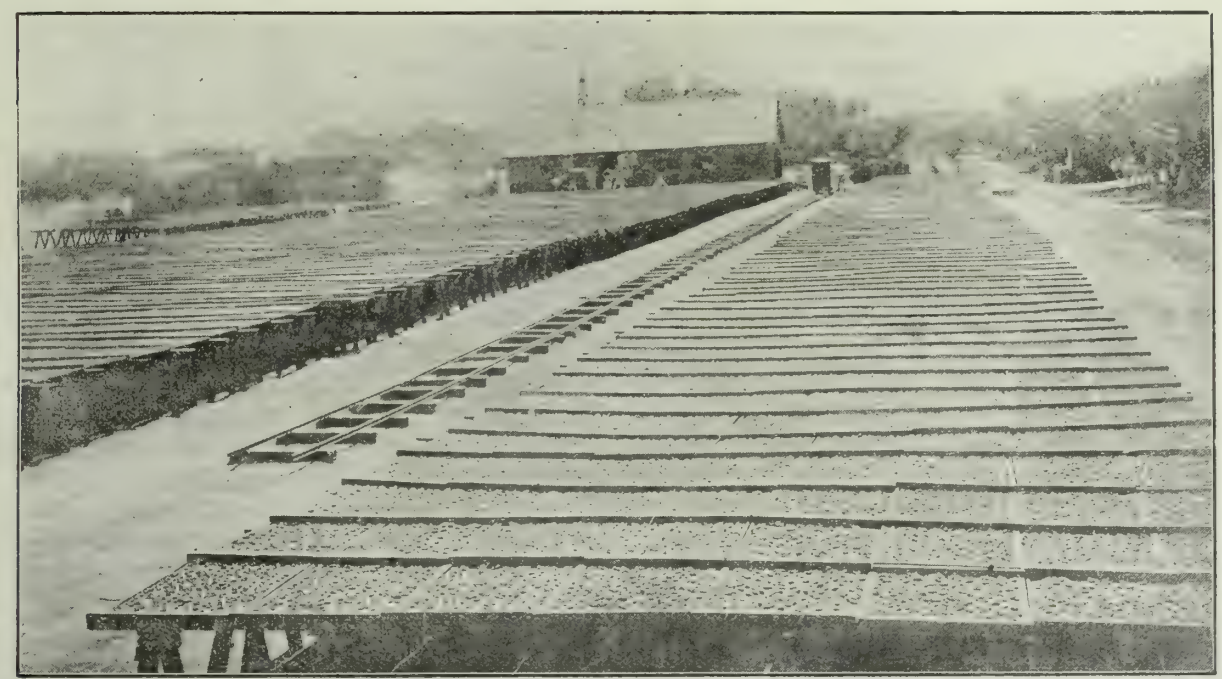
If a fruit man from anywhere in California were suddenly picked up and put down in a Winters apricot orchard, he would only need to look up in order to say, "I'm at Winters," provided only that he had been there once before. That is the best indication that apricot growing around Winters is in a class by itself, for just as the trees are shaped differently, so apricot growing there is different from apricot growing elsewhere in California.

The apricots of California are chiefly grown in the coast counties, and there is where the most progress is made in new plantings. Although apricot orchards are found in places where ocean or bay influences are not felt, Winters is about the only other place that they are found in large quantity, or are highly thought of. In the Winters district apricots are the leading fruit, and planting is increasing continually. It is a great apricot section, and yet differs radically from the bay or southern coast apricot sections, which are also prosperous and noteworthy.

Winters is pre-eminently an early fruit-shipping district. Vacaville, not many miles south, is more known as an early section because Vacaville produces cherries, which are the earliest fruit, while Winters does not. Other fruits in these two districts ripen practically at the same time, and ahead of nearly every other fruit district, though their locations are different. Vacaville is in a little valley opening into the southwestern part of the Sacramento valley. Winters is north of the Vaca valley and up against the foot of the Coast range, the whole Sacramento valley in front of it and the slope very gradual to it. The elevation of the town is only 140 feet, and the river many miles off. That elevation, though, is enough to make the frosts behave themselves, and this and the nearness of the hills make fruit ripen for market so early. Winters itself is in Yolo county, but right across Putah creek is Solano county, and the orchards are all around.

The Early Market.—Everybody knows that apricots do not stand high in quantity shipped fresh to market, but it is early shipment that makes Winters apricots so profitable. An offhand estimate is that a third of all the apricots grown there go off in the cars for fresh consumption. The price that is frequently obtained for these appears fabulous. The average net return for this year was over $1 per crate, guaranteed to contain 20 pounds of fruit. Of this, 25 cents would cover the cost of crate, packing, and all the rest of it. Two typical sales of one grower, perhaps not the highest of the season, but yet causing remark, were: 169 single crates returned $416.46 f.o.b. Winters, commission, etc., all paid; another lot of 150 crates netted $340.28. There is no need to say more about shipping Winters apricots.

Now, the reason is simply because they are early and also of excellent quality. Cherries, of course, are the first fruits of the season and first tickle Eastern palates, but cherries are much different from other fruits, and apricots are a big change and one well paid for. As long as there are good apricots and no other fruits in the running, the price is good. Winters has the apricot market almost to itself up until the earliest peaches and plums come in, and then, of course, the apricots have to get out. That is why apricot shipping is such a big thing from Winters and such an insignificant thing elsewhere.



Apricot Industry at Winters; Orchard Rack-Drying and Packing Houses.

Varieties.—A noteworthy thing about it is that the variety handled is a standard mid-season variety, not an early variety, which is mostly of inferior quality, as is the case with most fruits. A few early apricots are shipped, but the Royal is the main variety for every purpose, as it is practically all over the State. A few of what are called Derby Royals are grown. This is a seedling about two weeks earlier than the regular Royal, and in all ways appears identical with it, unless perhaps that it is more susceptible to rain injury.

Drying and Canning.—But apricots are not only profitable for shipping; they are very profitable for drying and canning. Some growers never ship, and all do some drying, or may sell to the canner. In fact, while shipping is very profitable, it is also a gamble, like most

(*Continued on Page 388.*)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Oct. 21, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	1.63	3.03	78	42
Red Bluff	.00	T	1.81	90	56
Sacramento	.00	.01	1.03	88	50
San Francisco	.00	.08	1.06	90	49
San Jose	.00	.17	.93	90	36
Fresno	.00	.33	.71	90	46
Independence	.00	2.52	.66	82	40
San Luis Obispo	.00	.98	1.21	96	52
Los Angeles	.00	.03	.48	94	56
San Diego	.00	.10	.37	86	56

The Week.

And now, since We and Mr. Rehart of Oregon jointly fixed up a forecast of awful and continuous rains, as printed in this precise spot in our last issue, there comes Father Ricard of Santa Clara University and says our frame-up suits him also from the point of view of the sun spots. This is all right: Science always has lagged behind Prophecy, but is welcome to catch up, quickly in this instance, because assurance of the early coming of abundant rains needs all the help it can get both from the law and the prophets. And so we have read eagerly the publication which Father Ricard made from Santa Clara on October 19 and take this very comforting conclusion:

A study of the rainfall at San Francisco shows that "a serious drouth lasts, on the whole, only one year: the year before being on the way up to it, the year after being on the way down out of it. Therefore the coming year is on the way down out of it. Foster, in a private communication, announces a wet November for the Pacific Coast, and Foster is not known to miss a point."

Father Ricard finds assurance in the skies for this very plain mundane deduction and says the sun and the moon and the eleven stars are all for more rain this year than last year. So you will note that all the Great Forces are teaming toward a result most devoutly to be desired: Ourselves, Mr. Rehart, Father Ricard, and Mr. Blockman (whose interesting letter is on another page of this issue) and the Heavenly Bodies innumerable, are all squeezing the clouds for you, and if you do not get wet through pretty soon, it will not be our fault.

In this connection we must modestly note that, since it is the present fashion for all great institutions and corporations to organize "public service departments" which shall do something gratis for the dear people, we too have instituted such a department and have it now at work for the public welfare, the greatest collection of talent ever aggregated, as described above. And we are glad to give assurance that it will operate day and night without increasing the subscription price of this journal.

The Professional Age.

We have to admit that the foregoing has rather a suggestive academic aroma and if that is offensive to the practical man he had better cut it out of his reading, and if he should elude this paragraph also he might free his breast of a great hatred. We have, however, to lift this from our own conscience. Current events show that the near-agricultural world has a great hunger and thirst for professors. Professors in the bud and professors in the sere and yellow are being snatched from their institutional chairs, hung about as to their necks with gold chains, rushed into the open and held fast in the intense heat of popular appreciation. The public appetite for agricultural professors is like that of which the poet sings:

Old man pudding and baby sauce,
And little boy pie for the second course,
He swallowed them all without remorse—
This king of the Cannibal Islands!

Never before in the history of the world has there been such a private and corporate demand for men of our calling: institutions of instruction and research cannot get money enough to hold those whom they desire to retain, and even those whom they may retire, because of a questionable estimate of their academic quality, are often quickly seized upon by the captains of development enterprises—paying them more than academic service would ever yield them. We have even already entered upon national and state government by professors, while professors on leaves of absence are directing the social, financial and commercial development of the country. In agriculture, however, the professors are running nearer to the rail and to the purse than in any other of the up-to-date races for preferment. This fact is impressed upon us by the announcement that a man who is well known in California for recent visits, Dr. C. G. Hopkins, professor of agricultural chemistry of the University of Illinois, has been granted a year's leave of absence in order to organize the agricultural work of the Southern Settlement and Development Organization of Baltimore. The striking work for which Prof. Hopkins is wrested from his university position was taking a poor, worn-out farm in southern Ililnois and, by dosing the land liberally with farm manure, powdered rock-phosphate and limestone, bringing it from the purchase price of $15 per acre up to production equal to 5% on a valuation of $300 per acre. This work was picturesquely called "Bread from Stones" in Circular 158, of which one can get a copy by sending to the University at Urbana, Ill. With six loads of farm manure and ground stones, costing not above $11 per acre spread upon the fields, the yield was brought up in 1913 to 35½ bushels of wheat per acre—24 bushels more than it produced before the ground rocks were added to the stable manure. It was this demonstration which unseated Dr. Hopkins at the University, for the statesmanlike promoters have pulled him out of his chair and set him to reclaiming the whole South, for aught we know. Nowadays a professor is a man who knows something and can do something, and people do not seem to care how much they pay for one. In our boyhood a farmer would not trust a professor to whittle a plug for a cider barrel. It surely is a professional age!

With the Nurserymen.

We greatly enjoyed the convention of California nurserymen in Fresno last week. It was a representative assembly of the craftsmen of this state, and there were also leading propagators and distributors of plants from Oregon and other neighboring states. The papers prepared for the convention were of notably good quality and interest and we shall begin at once the publication of those which appear to us to be of the widest popular interest. There was quite a frank discussion on the prevention of the spread of tree pests, and a quite full agreement that laws affecting the movement of nursery stock should be uniform, but it will require much more study and conference to determine what the terms of such uniformity should be. There was a very pronounced sentiment among the nurserymen in favor of giving more attention to the propagation of native trees and shrubs for ornamentation of home grounds, parks, etc. Several speakers emphasized the new opportunity which is arising for this work through the prescriptions of landscape architects, who are now being employed more freely than ever before in designing plans for the laying-out of home environments, with the result of much more taste and less garishness than prevails in most of the home-made landscape creations. With this better work comes a greater demand for the very unique and beautiful native growths of tree and shrub and less for the exotics simply because they are distant and different. The Nurserymen's Association has clearly demonstrated its right to exist as a public service organization as well as a very laudable class association. San Diego was chosen as the meeting place for the coming year and the following indicated as officers for that period: President, D. W. Coolidge, Pasadena, secretary-treasurer, Henry W. Kurckbery, Los Angeles; vice presidents, T. E. Mabee, Fresno; John Vallance, Oakland; Walter Birch, San Diego; F. Wightman, Chico; Arthur Cann, San Jose. These gentlemen were all present at the Fresno meeting and added greatly to its success.

Constructive Beef.

This is a very striking term which we find in the declarations from Washington that hungry people need not expect that the entrance of free beef from the outside world will fully appease their hunger. "The high cost of meat is a serious reality," said James M. Pickens of the bureau of animal industry, "and it is now obvious that the rise in prices in recent years is the natural result of an actual shortage in production. It is evident, also, that the country is experiencing an era of short production of meat, and that constructive means must be adopted if the American appetite for this class of food is to be supplied." From this comes the conclusion that to get more meat we must make it for ourselves, which is just what we ought to do for many reason. Prices will continue to be high, therefore more land and capital should go into the growing and feeding of live stock. We can make much more meat from a given acreage than we have done in the past—probably as much more as Prof. Hopkins did by grinding up the stones to feed the wheat plant. We can make it by more irrigation water and more alfalfa and better breeding and feeding of the animals on the farm plan than was ever possible on the range plan. Much of the land which is now being made into checker boards by the subdividers should go into real farms—each large enough to carry a band of cattle, a herd of swine and a flock of sheep, and there would be money and comfort in it for those who know how to farm, instead of so much disappointment for near-farmers by the checker-board route. The world has too little meat and must construct more. There is little danger of lower prices through the competition of meats from Argentina, Australia and other beef producing countries, for the experts declare that with the free

markets of England and other countries open to it "meat can hardly be more plentiful and cheap in this country."

California and World Shortages.

But there are other shortages than those in the meat supply. How much California will have to do with her winter-growing climate to help out other food-shortages beyond the mountains cannot be exactly stated, but there promises to be a lot of it. The eastern potato crop was cut down millions of bushels by unfavorable summer and autumn conditions, and if freight rates are favorable, we can help them out with new potatoes for several months before they can grow another crop. We cannot do so much in pickles, perhaps, because the winter cucumber requires glass even in California. Possibly, however, our local pickle makers may put down more of this year's crop for eastern use. It is announced from Chicago that from cucumber ranches all over the country comes the news that the crop will be only 40 to 50 per cent of normal, while around Chicago it will fall off to 25 per cent of the usual crop. "The cucumber crop is all in," said a report sent out by one house, "and has been almost a total failure in several of the large growing districts." But if we cannot do much with winter cucumbers we can surely alleviate distress with winter cabbage, for there is no limit to the amount we can grow of it. A few days ago it was announced from Fremont, Ohio, that cabbage had advanced to $17 per ton and kraut makers in that city, the center of the American kraut industry, had hard work getting material at that price. Winter cabbage growers should look into the situation and act accordingly. We can surely be ready to help the easterners fight their spring fever with good, sharp antiscrobuties. But there is another world shortage which makes us weep. Supplies of English willow, of which wooden legs are made, are pegging out; this country has been appealed to for a substitute. In this emergency the Pacific Coast is again on deck, for our forestry officials in Washington believe they will be able to find a substitute in the Port Orford cedar of the Pacific Coast, and they are now conducting experiments with that wood.

Queries and Replies.

Our Horticultural Creed

To the Editor: I have 100 acres of land in the Riverside district; good soil, temperature rarely falls below 20° in winter. I am considering planting to olives and I would be grateful to you the the following information: Do you think the olive industry has a permanent future? How would you class it in comparison with other fruit industries as to profits, taking into consideration, of course, equal care and treatment.—T. W., Los Angeles.

Whether you should plant olives under such local conditions as you describe depends upon whether you can find olive trees previously planted near by which are giving good returns under similar conditions. Planting olives on theoretical conceptions of the suitability of localities is very dangerous business.

We believe the olive industry, owing to the successes in canning olives and the influence of pure food laws upon olive oil adulteration, make the outlook for these products much better than it has ever been before.

We believe all fruits properly placed under the soil, temperature and moisture conditions which favor their best growth and productiveness may be counted as yielding nearly equal net returns. considering the investment in land, water, waiting for bearing and handling of the product. So far as we have observed, all our commercial fruits have reached maximum and minimum returns during the last quarter of a century which are practically identical. Therefore to plant good fruit in the best place for it, to handle the trees and products most intelligently, both in production and marketing, holds out substantially equal promise of profit. If it could be demonstrated that any particular fruit had the enduring advantage over others in net returns, this advantage would immediately disappear because planters would rush to it and take away this advantage by undue increase of its acreage. Therefore it seems to us rather desirable that this matter should remain an open question for each one to determine by his own experience and observation, at least to the extent of determining his own line of production.

No Cactus Consolation.

To the Editor: I am quite interested in spineless cactus, but would like to know whether it is all that it is claimed by the advertisers as a great feed for milch cows and hogs, and whether it will take the place of alfalfa. I have heard some say that it is only a money-making scheme, and that it would never be a success as cattle feed, and that it would soon go back to thorns; so I am writing you for correct information.—K. S., San Rafael.

The persistent efforts which kind readers are making to constitute us a cactus doctor cause us to sigh. If you cannot get the weight of cactus promotion off your chest, buy some and grow it, and feed it, and see of what good it is to you. It may be the best thing you ever bought and it may be the worst: that depends upon conditions: where you put it, how you use it, etc. So far as we have noticed, the facts which advertisers are using are correct for the conditions under which they were gathered and which they sometimes forget to describe. As to the opinions they express and the advice they give, you must be your own judge of them: we do not even know what they are. We may say that we never yet saw a plant, new or old, which was, in every respect and everywhere, as good as the claims made for it. That sort of thing began when the serpent introduced a new apple to the human race in Eden, and it certainly is not over yet. As for cactus, some people cannot praise it enough—and there is a careful statement along appreciative lines on another page of this issue of the RURAL PRESS. On the other hand, cactus is so badly suited to certain conditions that the Lord will not let it grow on some of his blooming deserts.

Two specific things you mention in your letter we are willing to comment upon: first, cactus, in common experience, will not take the place of alfalfa; second, a true spineless cactus plant will not become thorny in your lifetime, but a cactus plantation will probably become thorny because the seedlings will reproduce the experience of the cactus race, which has been, for aeons, that if it did not protect itself it would be eaten off the face of the earth.

Repelling Rabbits.

To the Editor: I have a young peach orchard of 50 acres and have had considerable trouble with rabbits. I have used protectors, but when heading the trees low, find that the rabbits work above the protectors and I have used oil with good success, as they will not touch trees as long as there is any trace of oil left. I have used mostly neat's-foot oil, which is quite expensive. I would like to know if the oil would in any way be injurious to the trees, and if not, if I could not just as well use a mixture, say of crude oil, and fish oil which would be cheap?—W. A. J., Modesto.

We apprehend you will find you have done serious injury to your trees by the use of oil upon the bark. Such injuries are particularly likely to attend the use of neat's-foot oil and fish oil, unless these heavy oils are emulsified as they are in the preparation of insect remedies. Crude petroleum does not seem to have such an effect and has been used without injury in a number of instances, although we doubt if it could be considered universally innocent.

Rabbits may be repelled by rubbing blood, spoiled meat or fat on the bark. Some growers kill a rabbit, open it up and use the carcass as a rubber. Others make a tea of quassi chips or of commercial aloes, one pound to four gallons, which is intensely bitter and prevents the rabbit from taking a second bite.

A good formula for painting the trunks of trees to prevent injury by rabbits is as follows: Slake in water over night the quantity of unslaked lime needed for the work. In the morning add enough water to make a good thick wash. Stir the mixture well and to each two and a half gallons of the wash add two tablespoonfuls of paris green. Take care to mix well in the wash. Apply to the trunk of the tree with an ordinary paint-brush; keep the wash stirred up so the ingredients will not settle to the bottom of the pail. Possibly the carcass of a rabbit thus poisoned might be dangerous to another animal which ate it.

The use of corn stalks, binding them about the trunk and allowing them to reach up into the branches is usually more protective than the usual tree protector, for the reason that it prevents the rabbits from working above the protector.

A Dried-Up Tule Pond

To the Editor: I have a peach orchard on light sandy soil. Also what was a ture pond, which has been dry for two years, and the tule dead (assisted by the hogs). There is a deposit of decomposed vegetable matter, black and moist, which looks good to me to make humus on the orchard land. Can you give me any information on that point without a sample for analysis?—P. L. W., Selma.

It would require, say, 40 tons to the acre to produce any noticeable effect. It would be good to a certain extent, but not as valuable as its appearance indicates, therefore it is easy to spend more time in handling and hauling than it is worth. If it is light and loose on drying, it would be valuable as an absorbent in the stable and thus save stable wastes and acquire added value for orchard use. Simply for value as a direct source of humus it would be worth less and cost more than a winter-grown cover crop. If you can drain the pond by a ditch or by digging a well in it down to a gravel stratum it may, after aeration (and lining, if not already alkaline) become most valuable for summer crops.

Stocks for Prune and Peach.

To the Editor: Which is the best root stock for a prune tree; also for a peach?—C., Lindsay.

The best stock for the prune and peach depends upon the character of the soil in which they are to be planted. Both do admirably on almond roots if the soil is deep, permeable and free from standing water. The peach also does well on the peach root on medium loams, and on the apricot on loams which are a little more apt to become dry, but the apricot is very subject to injury by gophers. The prune on the almond also does well on deep soils and on the Myrobalan plum root for heavy soils, which are either too dry or too moist for the peach root, but the peach does not give satisfaction on the Myrobalan root.

Unseasonable Prune Bloom.

To the Editor: What is the cause of prune trees blooming this time of the year? They have had no water since the first of June.—J. T. S., Oakley.

The lack of water to keep up normal summer growth is the cause. See the discussion on cherries which will not stay dead.

Fruit Crops and Prices of 1913.

[By JOHN VALLANCE, Vice-President, California Nurserymen's Association, at the Fresno convention.]

The year 1913 is fast passing into history. Its frosts and droughts make it long to be remembered by many as Anno Misereri, the "year of misery," as, in contradistinction to other years in the history of this great State, which may have been timely termed, as was 1793 in Europe Anno Mirable, the "year of wonders."

And yet, considering the many disastrous conditions confronting us during the season, this year has served well to once more show our sister commonwealths the magnificent productive capacity of our wonderful land. Nowhere else on the globe could such returns have resulted under such adverse conditions. In some sections the rainfall from September 1912 to May 1913 barely reached six inches.

The heavy frosts of January were disastrous to the citrus industry in the south, while late frosts in other parts of the State caused much damage to apricots, prunes and apples. Last, if not least, came the extreme heat early in July, scalding many of the apricots on the trees and causing a heavy dropping of prunes.

But why dilate on this? It does no good to grieve over losses. Let us turn to the brighter side and review the harvest, not as it affects the individual grower, but the State as a whole. With the exception of the late shipping grapes and apples, the fruit crop has now been garnered, and the yield and prices obtained compare favorably with any previous year. The fact that this year's shipments to Eastern markets are larger than last year is shown by the weekly report of the California Fruit Distributors [published each week on our market page.—EDITOR].

Santa Clara Valley.—I have a letter from a prominent Santa Clara fruit-grower who reports to me as follows. Apricots: 60% of full crop; canning price, $50 to $60 per ton; dried price, 12½ to 15c per pound; quality good where irrigation was possible. Peaches (Clings): 75% of a crop; canning price, Phillips $25 to $30, Tuscan $30 to $35, Midsummer $20 to $25 per ton. Peaches (Free): full crop; Lovell and Muir, $15 to $17.50 per ton; dried price, 4½ to 5½c per pound. Bartlett Pears: 60% of full crop; canning price, $35 to $40 per ton. French Prunes: 40% of full crop; dried, 4½ to 6¼c per pound.

I have, as you will note, given the percentage of full crop, and not as compared with last year. The latter method of figuring appears to me misleading.

Southern California.—The following report from a Los Angeles operator gives conditions in the southern end of the State:

Apricots: light crop, $40 per ton.
Apples: heavy, $30 per ton.
Pears: medium, $40 per ton.
Peaches: heavy, $20 per ton.
Prunes, French: medium, $30 per ton, green.
Plums: heavy, $25 per ton.
Walnuts: medium; No. 1, 16c per pound; No. 2, 12½c per pound.

Almonds.—From the California Almond Growers' Exchange I have the following data:

The almond crop is about one-third of a normal one, or a total of 1000 tons for the State. Last year's figures, obtained from the same source, were 4000 tons. The prices obtained were as follows: Nonpareils, 19c; IXL, 18½c; Ne Plus Ultra, 17½c; Drake's, 14½c. Last year prices were, respectively, 14c, 13½c, 12½c, and 11c.

Watsonville District.—Cherry crop was heavy and prices were from 8 to 16c per pound. A few of the late cherries were injured by a rainstorm.

Apricots set well, having to be thinned heavily and the season closed with 1000 tons of dried fruit. Many of the growers received as high as 12 to 13c per pound for their best stock.

Apple conditions were peculiar. The cold snap which swept over the State in the spring cut a swath down our side of the valley half a mile wide, doing great damage. In other sections the damage was done in streaks, often blighting one row of trees and leaving the next row so heavily set that they had to be thinned. The apple crop was cut 60%, and the hot spell in September cooked many of the matured crop on the trees, again reducing the crop. The output will be in the neighborhood of 1200 cars, against 3000 to 4000 in ordinary years. As a compensation, however, the price is better than it has been in years, good stock running from $1 to $1.50 per box.

Advantage of Irrigation.—W. S. Guilford, of Willows, one of the Committee on Deciduous Fruits, reports to me as follows: "There has been very extensive planting during the last year, especially almonds and French prunes. The crop is very short where irrigation is not available, but where there is irrigation the crops are very good. It will make the total crop in Sacramento valley short."

San Francisco Market.—The conditions were never better, according to the views of one of the leading commission men in San Francisco, to whom I was recently talking. Receipts of fruit were heavy and were of good quality, prices ranging high.

Walnut Crop for 1913.—Revised estimates for this year's crop are between 9000 and 10,000 tons, of which 1800 tons will be stained nuts and the balance will make a first-class article. Last year's crop for the State was 11,250 tons. Prices made by California Walnut Growers' Association is 16c per pound for No. 1 Softshells.

Fresno Freaks.—To show the freakish prices, as well as crops that existed during 1913, I will give extracts from a letter I received from our worthy president, F. H. Wilson, showing conditions in his section. He writes as follows:

"The peach crop has been short. I think about 25%. Quality about normal. Price low, from 4½ to 5c per box. Figs a good crop and price good, from 3 to 4c for common white, 5 to 6c for Smyrna. Wine grapes are better in price than for years, from $10 to $12 per ton being paid; the crop is below normal. Raisin grapes I consider 25% short of normal crop, but the price is better than for some years, owing to the success of the growers' organization, which controls about 85% of the crop. Table grape crop is short about 40%; prices have ruled a little higher than the past season; quality of crop is below normal. Emperors are about 60% short; quality in some cases is exceptionally good, but in most cases is below normal. The shortage of crops I attribute to lack of moisture in the soil. Shortage of rain and snow is responsible."

Fruit Tree Planting in 1912-1913.—Considering the almost rainless season, the planting in 1912-1913 was very heavy. The cry that we had for twenty to twenty-five years that this would be overdone has certainly not come to pass. Nay; rather the reverse. I could not say positively what fruit seemed to lead, because I believe all varieties had a large following, each section planting what it was best adapted for. I believe that far more intelligence is used in this respect today than was done twenty years ago.

APRICOTS IN THE WINTERS DISTRICT.

(*Continued on Page 385.*)

very profitable things, and the amount shipped and the prices secured depend on the state of the market. The very best are shipped and the picker has to use judgment what apricots to pick for shipment and what to leave on the tree to ripen up for a week or so. Seldom, if ever, can all the crop go to the market.

The canner is also particular in the quality of fruit, and naturally pays more than the apricots would be worth for drying. He doesn't care especially about the time of ripening, so the popularity of Winters apricots indicates high quality. Although some growers dry all their fruit, a rough statement of the matter with others would be: The finest early fruit for shipment, other fine fruit to the cannery, the rest to be dried; always remembering that much of the finest fruit grown is dried and that dried apricots from Winters have a very fine reputation. This year about 1000 tons of fruit were shipped to outside canneries, and about 300 put up locally. The canning price was from $50 to $60 per ton, and when the crop is heavy it is about $25 per ton. The amount canned varies, of course, with the price, but does not fluctuate as much as the total crop. This is practically true everywhere.

The dried apricot from Winters is noted for its clear color. This is due to the dryness of the atmosphere and abundant sunshine. The apricots from other leading districts are grown in a more humid atmosphere and average a larger size when dried. They also may be somewhat fleshier, but the Winters apricots, coming from a drier climate, are clearer and better colored. They also will hold over in storage longer through the winter, and otherwise are less susceptible to conditions of storage, and when it comes to the price, they stand up with apricots of Santa Clara county.

Pruning and Growing.—The pruning indicated in the opening paragraph is an outgrowth of conditions. Whether it is best or not is becoming a matter of argument, with good chances of change when improved methods of culture in other lines come. It is called the open-top system of pruning. Hold in mind a wide, shallow bowl with long legs bent inward and joining at the bottom coming down from rim to ground and you know what a typical open-top apricot tree looks like. The idea seems to be to have leaders to come up along the outside of the tree, none in the center at all, to have the center of the tree open, or occupied only by fruit wood and not much of it. In the yearly pruning the development is all outward. There is an effort to have fruit wood along the leaders down to the crotch, but often without success. Looking over an orchard from above, there can be seen a lot of flat green disks set regularly 20 to 30 feet or so apart. This style of pruning, by the way, is rather contagious. You will see peach and plum trees developed about along those lines, not because of any wish to do so, but simply because the pruners unconsciously use the same methods that they have been trained to on apricots.

There are two reasons given for this style of pruning, one of which is disputed by friends of the standard vase-shaped tree, and the other can be made not to hold good.

The first reason regards earliness, which is so profitable. It is claimed that by letting in air and light the fruit ripens more quickly than with the vase shape, also that the fruit colors better and ripens evenly. Winters growers claim a fine color for their fruit. On the other hand, it is said that by the reduction of bearing wood as compared with the vase shape, the tree in spring puts forth more suckers than it ought to and that the sucker growth actually delays ripening. You can take your choice of suckers versus shade as affecting ripening. It is clear, however, that the open-top method of pruning gives much less fruit wood than the standard vase shape, and it would appear that there should be very good reasons for adopting the open-top method before one would decide to do so.

The other argument regards moisture. Having less leaf surface, the drain on the soil for moisture certainly is less, and it is claimed that this reduction in leaf surface is needed to keep the trees thrifty. Well, Winters has from 20 to 24 inches of normal precipitation, and a wonderfully deep soil to keep it in. That is more than Santa Clara averages, but there is this difference: Evaporation is very much less in the Santa Clara valley, owing to occasional fogs and a more humid atmosphere. Possibly also, being on the absolute floor of the valley gives more sub-irrigation than being over a hundred feet above the lower part of the larger valley. Anyway, it is claimed that a normal rainfall, or perhaps say the frequent years that are below average, would not give enough moisture for a tree with all the leaf surface that could be developed under ideal conditions.

The Changing Order.—There is a changing order in this connection that is for the better, and the two dry years are largely to thank for it. A few years ago about 5 per cent of the growers irrigated. About half are now said to do so. Some get their water from a ditch company, which is not satisfactory, but highly desirable, nevertheless. Others get water by pumping, which is more expensive and highly desirable also. With plenty of water, whatever its source, it is difficult to see where the second argument in favor of the open-top pruning would hold good.

and it is irrigation that is causing the sentiment in favor of the vase system. Offhand, a person would estimate a yield of half as much again, at least, from the vase system, water being sufficient and good judgment used generally, and it would not be surprising to see the old way gradually dropped. Irrigation has proved so genuinely satisfactory that it will evidently be the regular thing later.

The usual method of irrigation appears to be by flooding, that is, using small checks thrown up around each tree, or perhaps a couple of trees. Furrow irrigation can hardly be seen. The soil is of a heavy loam type and very deep, and it is great to see the way that the water will get into a crack and keep pouring in, coming out here and there far off from the direction where it was started. Such irrigation gives a very even distribution, wherever the method is tried on the surface. Fall and spring irrigation seems to be the rule, though if a person has ditch water and is unable to get enough in fall or spring, he may irrigate in summer if his trees need it. The roots evidently go down very far, and a lot of water will last a very long time.

Cover Crops.—The way the roots go down toward China makes fertilization appear unnecessary in theory, especially as the soil is of a type that is rich and strong. However, something is badly needed on many orchards to improve the surface. The soil toward fall will run together in the lower half of the plowed portion, owing to lack of humus, and barnyard manure or cover crops to supply humus is needed.

Practically no one yet grows cover crops, although many are planning to do so. If heavy early rains come, a fine natural growth starts, but early rains do not come frequently enough. The only hope is irrigation to start a cover crop, most probably vetch. The rich soil and fine thermal location would make this do excellently with the right sort of a start.

The trees themselves are healthy and untroubled by disease or insects. Shot-hole fungus would be bad if spraying were not done in the fall, but spraying is inexpensive and easy, and very effective. Scale gives practically no trouble.

It is a region of fine orchards and fine possibilities, which the growers there appreciate. It is only a pity that it is so little known by growers elsewhere, but being off in a corner, this is natural. Without irrigation it has done great things, and the growing use of irrigation is putting on the finishing touch.

De-naturing Surplus Oranges.

(By Albert Chapelle of Los Angeles.)

One ton of California oranges will produce approximately 20 gallons of ethyl alcohol, or the grain alcohol of commerce. The least valuable culls, which are now going entirely to waste, can be utlized for the production of alcohol. The process is the simplest method of fermentation and distillation, which means that the needed plant is comparatively inexpensive.

I have given considerable attention in the past few years to the great problem of the utilization of waste products. Unfortunately, the laws governing industrial distilleries, or the production of de-natured alcohol, have been so complex, and the government supervision has been complicated by so much red tape, that very little attention has been given to the subject. As a matter of fact, the governmental restrictions seem to have been made as severe as possible, the result being to discourage the development of the industry.

The recently enacted tariff bill, however, carries some amendments relating to de-natured alcohol, relieving the business of some of the red tape. From the California view point, this is probably one of the important features of the new tariff law, and the result should be a very material improvement in conditions and in the development of an industry of great importance to the fruit interests of the state.

My investigations warrant the statement that the tonnage of waste oranges at times nearly equals the quantity marketed. I believe the waste is even greater with respect to other fruits grown in California than in the case of oranges, and if these other fruits are included with oranges then the waste very greatly exceeds the marketed product. There is also a considerable waste of vegetables. When all of these products are considered, the possibilities of making de-natured alcohol assume considerable importance. There is absolutely no question as to the possibility of utilizing a very large percentage of this enormous volume of waste, and at a reasonable profit.

To de-nature alcohol is to add gasoline or chemicals to ethyl alcohol, to render it unfit for or impossible of use for beverages or patent medicines, thus restricting its use entirely to manufacturing purposes and for consumption as fuel. All de-naturing materials and processes are minutely prescribed by Federal law, both as to quality and quantity, and the entire process of manufacturing and de-naturing is under the direct supervision of Federal inspectors.

Speaking now of waste oranges only, the possible quantity of ethyl alcohol which can be produced per ton depends entirely upon the carbo-hydrate analysis of the fruit, which varies slightly in different orchards, because of soil and seasonal conditions. My own tests, which have always been carefully made, show conclusively that the range is from 18 to 24 gallons per ton. The pulp remaining after distillation has commercial value, in addition to the value of the alcohol, because it contains chemical elements valuable for soil fertilization. And in addition to these values, is its usefulness or beneficial effect upon the soil as humus. As a matter of fact, the plant food value of this pulp is equal to the best barn manure, ton for ton.

The process of producing alcohol is by no means expensive. The fuel cost is small, for the reason that proper fermentation can be had at a temperature below 100 degrees. Fermentation is the second step in the process. The alcohol product contained in the fermented mass volatilizes or is distilled at approximately 140 degrees fahrenheit.

Any plant for the utilization of waste products would necessarily be employed the year round, in order to be a commercial success. Waste oranges could not be provided throughout the year, but the same plant could be used for other waste or surplus fruit and vegetable products. Any vegetable reasonably high in carbohydrates would be available. For example:

Rice yields approximately 75 per cent.

Corn, rye and barley, 70 per cent.

Corn stalks and cobs, from 5 to 8 per cent.

The different varieties of fruits yield from 5 to 30 per cent.

The waste from beet sugar factories, approximately 80 per cent.

Casava root, 35 per cent .

Irish and sweet potatoes, 20 and 25 per cent respectively.

Turnips, 10 per cent.

Sugar beets, 15 per cent.

These figures are standard, and are in part taken from tests and practical operations accepted by the government as reliable, and therefore constitute a safe basis for commercial figuring. It will thus be seen that even the despised corn stalk will yield more than half a gallon of alcohol to each 100 pounds.

There is of course nothing new in the subject of denatured alcohol. A few years ago considerable interest was excited throughout the country. It was then deemed possible that it would serve as a substitute for gasoline, as fuel for automobiles and small power plants, and could be cheaply produced. The heat efficiency is nearly equal to that of gasoline. In practice, however, it was found the law was so complicated and the restrictions so numerous, that the whole matter dropped out of sight. Under the changed conditions due to the new law, it is worthy of attention, for in these days of complex market conditions and merciless competition, the utilization of waste product is becoming more and more important. It is a problem particularly important to Southern California.

But let no one picture an immense distilling plant for reclaiming the waste fruit and vegetables of a large area of country. The plants for producing de-natured alcohol from scattered waste products must be small, as a rule, and so located as to secure the shortest possible haul for the material to be utilized. For the haul is the principal cost item of the process, and the one that requires the most careful scrutiny, if satisfactory results are to be achieved.

There has been a good deal of misinformation made public concerning industrial distilling, coupled with unwarranted suggestions of extreme profits to be made. Without doubt, a good return upon the investment is assured with even reasonably good management, using waste or unmarketable products only. And conditions frequently occur when an over supply and consequent low price destroy all possibility of profit to the producers of fruits and vegetables. Under such conditions, the industrial distilling plant would be of great value in affording an outlet for the otherwise unsaleable surplus of a perfectly good product. As market prices sometimes go, it would be more profitable to the producer to turn his product into de-natured alcohol than to ship to the usual market.

The very first thing to be considered in the installation of a plant for the production of de-natured alcohol is the quantity of waste or surplus fruits and vegetables, reasonably high in carbo-hydrates, available within a reasonable distance from the site of the proposed plant. There should of course be sufficient raw material available throughout the different fruit and vegetable seasons to keep the plant employed practically the year round. The possible tonnage should of course govern the size of the plant. Unquestionably there are many localities in Southern California furnishing the necessary requirements, and where the production of de-natured alcohol would be a reasonably profitable industry, and materially increase the returns to the orchardists and ranchmen.

NEW METHOD OF ATTACKING MOLES.

Everyone who has had any experience with moles knows that they are very difficult to destroy so the following letter to the Transvaal Agricultural Journal from a reader telling how he cleaned them out of his garden may come in valuable to gardeners here in California. This man writes:

I had been worried for a lifetime by moles in my garden. I tried all sorts of plans to eradicate them, such as mole-traps, shooting, and dibbling at them with a spade, etc., all to no use. One day, feeling much annoyed at seeing my fine potatoes being ruthlessly destroyed by Mr. Mole, I thought I would give "rough on rats" a trial; the result was a complete success. I have seen nothing of the plague since. I took a medium-sized potato, cut a round top off, and then, cutting in slantingly all round, I scraped out the inside, not too close to the skin. I chopped the contents up and mixed a fair quantity of "rough on rats" and a small quantity of sugar with it and replaced it in the potato shell, then replaced the lid on the potato, keeping it in place with string. I then went to Mr. Mole's rubbish heap and cleared it out, placing the potato right inside the run, and covered the opening wih a very small quantity of earth and left it. I kept careful observation over the ground and in a couple of days I saw elsewhere Mr. Mole at work. I felt that my plan was a failure, but would have another try, so I repeated my operation and kept close watch. But from that day till this I have never seen the sign of a mole, not only in my own garden, but also that of my neighbors, which indicates the wide range of the moles' operations.

I give this experience for the benefit of your numerous readers who, I hope, will lose no time in adopting my method at a small cost and a great saving to them.

Why the Year Will be Wet.

[Written for the PACIFIC RURAL PRESS by L. E. BLOCKMAN.]

The coming winter season is rapidly approaching and with the exception of the forecast of a dry October we hear but little of note. One Oregon distant forecaster maintains that we shall have a wet winter, but puts off our heavy rains till February. These are all surmises unless valid reasons accompany statements.

That October promises dry is already very much in evidence, and we should further add our own reasons—Between the 6th and 8th inst. quite a rain storm was passing over Washington and Oregon, which was but lightly felt in Eureka and on the Bay region gave only some fog clouds, showing that the storm center is still very far to the north, in the summer latitudes a persistent high barometer also prevails to the northward.

The concensus of opinions of all those who have observed weather conditions on the coast is that early rains usually are followed by dry or half dry seasons. This is particularly true as regards September and early October rains—light showers excepted. Last year, and the year before we had heavy September rains. In fact last September it rained 1.25 to over 2 inches around the Bay district. It rained about the same amount in September 1850 and at the same time; and the latter was the driest season, "50-51," we have any record of.

The further fact is to be noted that the August and September temperatures preceding the drier seasons are all cool. Last year it was so cool that the grapes and fruit of the San Joaquin valley did not get their normal sweetness for lack of sun's heat. On the other hand all the wetter seasons have been preceded by normal to above normal, August and September temperatures and warmer Octobers as well. The reason for this summer and autumnal weather condition would necessitate a lengthy Pacific Coast climatological discussion, which the average reader will not here be interested in. Suffice it, however, to say that normal fall conditions should produce normal rainy seasons following, and contrariwise with abnormal late summer and fall conditions.

This whole coast in under the periodic rain belt, from Alaska to Chile and particularly conditions in Alaska; summer conditions on the west-Mexico coast also affect our winter rains to some appreciable extent. This matter has been repeatedly referred to: normal rainfall over Sonora with its continuance of summer rains into Arizona show a normal activity of a part of the north and central Pacific rain bearing area, which is felt later in our belt. Rains were below normal on the Sonora Mexican side for the last year and year before; this year it has been normal.

The Alaska cold has not had its average intensity the past two years, consequently the high barometer, that is the concomitant of cold weather has not hovered over the Alaskan Gulf and forced the rain bearing area southward. Warm winters over Alaska prevail during our driest seasons; the Arctic circle cold having shifted itself apparently further eastward, Europe at the same time is colder than normal. This year we already have evidence of coming colds in the severe snowstorms at Nome about 10 days ago. If this cold continues we may expect normal to extra normal rain in these latitudes—that which we are so anxiously seeking. My predictions would be for heavy rains in December and January. In the natural course of events after two dry years such a sequence is most apt to follow.

Berkeley, Oct. 12.

[Mr. Blochman's favor came in just too late for our last issue. We are glad to see that he from his own analysis reaches the same conclusions that we did in commenting upon Mr. Reharts predictions.—EDITOR.]

CALIFORNIA STILL LEADING IN GOLD.

California's claim to the name of Golden State has never been successfully challenged. After being worked for more than sixty years her mines are yielding more gold than the mines of any other State, and the profits of mining here are as sure and as large as anywhere.

The mint figures for the year 1912 place California first in the list of gold producers. Colorado is two millions behind her, and Alaska three. Nevada's production is some seven millions shy of California's total for the year. The other mining States straggle still further in the rear. California is still El Dorado, with an aggregate of $20,008,000 for 1912.

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Government Whitewash.

To the Editor: Will you kindly let me know how to mix lime for whitewash like the government uses for light-houses? I saw it in some paper some time ago, but had no use for it then.—U. P. T., Marysville.

The U. S. Government receipt for an enduring whitewash is as follows: Take a half bushel of unslaked lime, slake it with boiling water, cover during the process to keep in steam, strain the liquid through a fine sieve or strainer, and add to it a peck of salt, previously dissolved in warm water, three pounds of ground rice boiled to a thin paste and stirred in while hot, half a pound of Spanish whiting, and one pound of glue, previously dissolved by soaking in cold water, and then hanging over in a small pot hung in a larger one filled with water. Add five gallons of hot water to the mixture, stir well and let it stand for a few days, covered from dirt. It should be applied hot, for which purpose it can be kept in a portable furnace. A pint of this mixture if properly applied, will cover a square yard and will be almost as serviceable as paint for wood, brick or stone, and is much cheaper than the cheapest.

This receipt is usually given by request several times a year and if readers kept all copies of the RURAL PRESS on file it would be a matter of only a few minutes to glance at the index at the end of each volume in June and December and turn at once to the receipt. As a matter of fact there are few questions on California farm practice that are not taken up in one form or another in the RURAL PRESS every couple of years and files of the paper with a proper use of the index will prove of great value.

CONTROL OF SMUT OF WHEAT.

To the Editor: Please inform me if it is advisable to dip smutty wheat in bluestone solution and sow for seed and with what result or effect it would have on next year's crop.—Subscriber, Calveras Co.

Wherever smut is likely to occur it is highly desirable to use the bluestone or formalin treatment to prevent it. The less smut on the seed before treatment the better and it would be better to get clean seed rather than to use smutty seed. However, where smut is prevalent all seed clean or not should be dipped. There are two different solutions that can be used. One is composed of bluestone, one pound to five gallons of water, the other of formalin, one pint to 30 gallons of water. The seed should be soaked long enough to get every grain thoroughly wet and then immediately taken out. If not planted at once the grain must be dried before storing. Plant a little more seed after this treatment than would be used with untreated grain. To dissolve bluestone either stir the water frequently or hang in sack or basket just below the surface of the water.

If loose smut affects the seed, wheat or barley, the following treatment is better than the bluestone or formalin: Soak in cold water for five hours. Then soak in water at a temperature of 125°F. for 15 minutes. The proper temperature must be carefully maintained to make this treatment successful, but it is not usually necessary in California.

TESTING SHRINKAGE OF SHIPPING FRUITS.

Ten carloads of dried fruit started recently from Los Angeles to New York, Washington and other cities of the East as part of extensive tests being conducted by the United States Bureau of Chemistry to obtain data for the drafting of regulations for the new net weight law, which requires that the contents be plainly indicated on the outside of every package of food. The tests are to determine the amount of shrinkage which takes place in transit from the Pacific to the Atlantic coast.

That many niceties of calculation must enter into the preparation of the regulations and the figuring of the allowances which justly must be made on account of the shrinkage during shipment, is shown by the fact, as certain products frequently will lose weight when shipped from a city where the climate is moist to one which is in high, dry place, whereas they will take on weight when sent from a dry to a moist climate. Some crates of macaroni, for instance, recently shipped to Denver and Arizona lost weight, while those sent to New Orleans, San Francisco and Seattle gained owing to moisture in the air.

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Put Alfalfa in Right.

By J. H. Barber of Livermore: especially revised for publication in the PACIFIC RURAL PRESS, from original appearance in Patterson Irrigator.

[The writer, Mr. Barber is a man of wide experience and observation. Some years ago he had charge of sub-stations for the University. More recently he has lived and worked in the San Joaquin valley and to the irrigated plains of the west side of that valley, these suggestions particularly apply though helpful everywhere—EDITOR.]

If the right soil and moisture conditions can be provided and maintained, a good stand of alfalfa may be secured in the lower San Joaquin valley at almost any time of the year. This is proven by good stands that were sown at all times of the year, ranging from September to July. It is nevertheless true that some times of the year are better for sowing than others. In other words, at certain seasons it is easier to secure a good stand. This is readily understood when we consider what is required for good germination of alfalfa seed and quick early growth of the young plants.

There is no mystery or hocus-pocus about the growing of alfalfa. Given proper soil and moisture conditions, alfalfa can no more help growing than water can help running down hill. And these conditions are practically the same as are needed by any other small-seeded crop that loves warmth and moisture. They are, first of all, deep plowing, then thorough settling of the soil by rain or irrigation, for alfalfa likes a well-settled, firm seed bed. For this reason good stands are sometimes obtained by simply disking the land without plowing, when all other conditions are favorable. But in sowing without plowing the chances of failure are so great, and in addition the subsequent growth of the stand, if one is obtained, is so apt to be disappointing, that no experienced grower would think of planting without plowing the land on loamy soils, at least.

After plowing deeply (at least ten inches) and then settling the seedbed with water, the surface should be harrowed as soon as a team can be got on the land. Do not wait until all the wet spots are dry enough to work, but as soon as part of the piece is dry enough harrow that part, and follow up on the balance as soon as you can get on it.

Harrowing is better than disking because it loosens the surface and pulverizes it without turning up too much of the soil to dry out. It is very necessary to keep the moisture as near the surface as possible, while at the same time making a fine seed bed of the top inch or two. The harrow is the best tool for this purpose, and the land should be gone over with it again and again until a fine seed bed is made with moisture within an inch of the surface. Then drill in the seed, putting it in moist soil about an inch below the surface, that is, just into the moist soil. Follow up with a plank clod crusher or a roller, if the weather is dry. If it looks like rain do not use the plank or roller, but harrow lightly or else do nothing after drilling, as your judgment may dictate.

If the above directions are followed faithfully, and good fresh seed is used at the rate of fifteen pounds to the acre, a good stand may confidently be expected.

Now, in the hot, dry weather of the summer months it is usually very difficult to maintain a proper amount of moisture close enough to the surface, especially on heavy land. On the other hand, in December and January the soil is apt to be too cold for quick germination, and in case of continued rain the seed is likely to rot. Therefore, while some good stands have been obtained from plantings made at these times, it is better not to sow during the months named, particularly on heavy soil.

During the balance of the year, that is, from September to November, and from February to May, the general conditions are favorable and one takes merely the ordinary chances of the weather. Fall and spring sowing may therefore be undertaken with confidence, provided always, as stated above, that a proper seedbed is prepared and the seed properly placed in it.

Choice of a precise time for sowing will naturally be governed by the weather of the particular season and by the convenience of the individual grower, but, other things being equal, the periods from September 15th to October 31st and from February 15th to March 31st will usually be found the best times for sowing.

CHECKING LAND FOR ALFALFA.

As this article is intended principally for newcomers to whom the whole matter of alfalfa irrigation is strange, it may be well to begin by defining some of the terms used which will be novel to them.

Checking a piece of land is dividing it up into small areas for convenience in irrigating. Each subdivision or check is surrounded by raised banks or levees, which confine the water so that it will spread more or less evenly over the surface of the check. This surface is leveled off and smoothed so that water spreads evenly or flows equally over it, according to the style of checks adopted.

The raised banks which hold the water on the checks are called levees or dikes, the former being the name generally used in California. Some people call them checks, but this is an error. The term "check" is properly applied to the area enclosed between the levees.

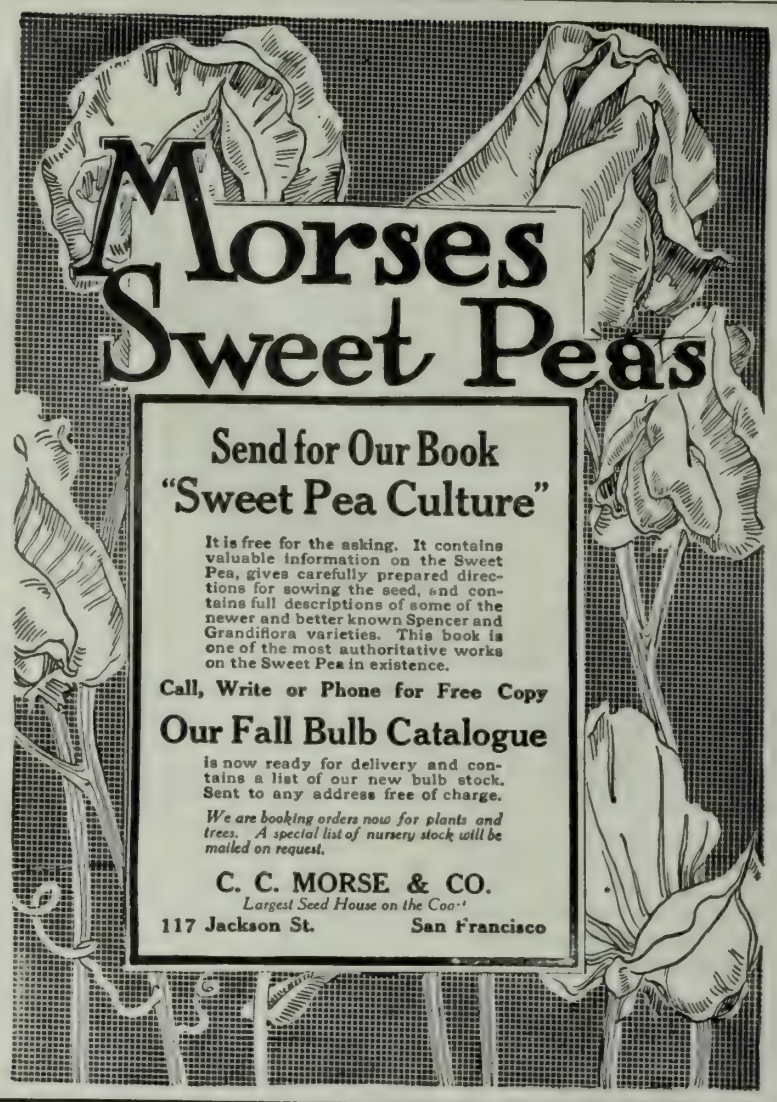
The head ditch or field ditch is the ditch built by the owner of the land to carry water over his field to supply each of his checks. It connects with the Water Company's sub-lateral and receives water from it at some point on the boundary of his land, usually at the highest corner. The gate at this point, through which the Water Company delivers water to the landowner is called his headgate because it is at the head (the highest point) of his ditch. The term "headgate" is sometimes applied also to the gates through which the water flows from the head ditch into the checks, but these are better called "check-gates" or "check-boxes."

Drops, or stops are gates placed at intervals across a head ditch that has considerable fall. They are intended to hold back the water in the ditch so that it will flow more slowly, and also to raise the water to a higher level so that it will flow out into the checks.

DIFFERENT TYPES OF CHECKING.

There are three methods of checking in general use for alfalfa irrigation—strip checking, contour checking, and square checking. Each has its special uses and adaptations, and each, unfortunately, has also its strenuous advocates who will urge the adoption of the type they fancy, entirely regardless of the conditions obtaining on the particular piece of land that is to be checked. On the other hand, luckily, each of these three types may be modified in the direction of one of the others so as to secure some of the advantages of the other type without at the same time sacrificing the good points peculiar to itself. Some ways of thus combining advantageously the good points of two methods will be explained later in considering each type separately.

Before proceeding to check up a piece of land, the owner should consider care-



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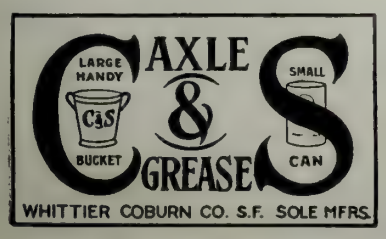

fully which is the method of checking best suited to that particular piece. No two fields are exactly alike in surface, though in some cases the differences may be slight. Each piece that is to be checked as a unit should be considered in the light of its own conditions; that is, with particular reference to the character and condition of the soil and the direction and steepness of the slope. A preliminary survey with a level should be made to find out definitely the direction of the slope or slopes and the amount of fall in each direction. Any good contractor will make such a survey free of charge. In fact, if he is a good contractor, he will want to know for himself just how the land lies before proceeding with the work of checking.

WHICH SHALL IT BE?

Having found out just how the land slopes and the amount of fall in either direction, it is time to decide which style of checking to adopt. If the land is to be devoted to alfalfa alone, decision is not so difficult; but if walnuts or other trees are to be planted on the levees, the question becomes a little more complicated.

For alfalfa alone, where the slope of the land is uniform and not too steep and the soil takes water readily, strip checking is a desirable method. Strip checks cut up the land less, are more easily made, and require the moving of less earth than either of the other methods. Also, if properly laid off and well leveled, they are the easiest to irrigate. And in case the owner should want to plant trees with the alfalfa later on, the land will be all ready for them.

STRIP CHECKS.

Strip checking, also known as the border method of irrigation, is especially adapted to land with a slight fall and uniform slope. Land with an even grade of not over three inches to the hundred feet, that is, one foot in four hundred, presents ideal conditions for strip checking. Less fall than this is better than more; in fact, more than four inches to the hundred feet is not desirable, unless on light soil that absorbs water very freely. On such light soil strip checks may give satisfaction with a grade as high as six inches to the hundred feet, but in such a case it is well to make the checks rather narrower than usual, say about forty feet wide instead of fifty. This is because with the heavier grade the water does not spread out sideways so well on account of its stronger tendency to run downhill.

On loamy soils strip checks have not proved satisfactory on heavy grades, and on such land the writer believes that a fall of one foot in four hundred should be the outside limit, and, as stated above, less than this is even better.

Fortunately, it happens that practically all irrigable land slopes in two directions, and generally less in one direction than in the other. Therefore, if the grade in one direction is too heavy, the checks may be laid off down the other slope. Sometimes both the slopes are too heavy for good results with strip checks run directly downhill. In that case, if strip checks are desired, they may be laid off diagonally across the face of the slope at such an angle as to secure the most desirable amount of fall. When strip checks are laid off in this manner, each check will have a high side and a low one, and great care must be taken to grade off the surface of the high side, moving the earth over to the low side until each check is quite level across; otherwise in irrigating the water will naturally run down the lower side and leave the high side dry or nearly so.

(To be Continued.)

Plans are being made for a cannery to be established at Manteca.

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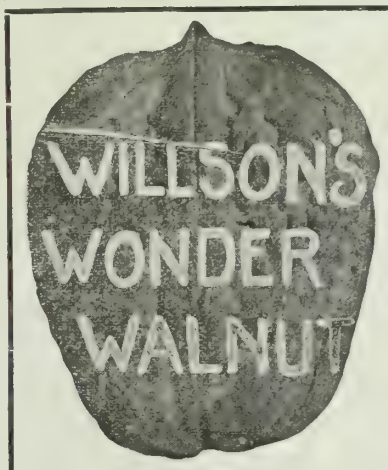

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AGRICULTURAL REVIEW.

With the Fruit Men.

W. P. Hammon, of Palermo, Butte county, is intending to set out 100 acres more to olives and oranges, mostly the former.

The olive crop of Butte county is estimated this year at 1500 to 2000 tons. Only a small amount has yet been harvested. It is claimed that since the reduced tariff went into effect prices of foreign olive oil have gone down greatly in the United States.

Prune drying has ended in Anderson, Shasta county.

There were 100 tons of berries produced on the Laura E. Barlow ranch, near Sebastopol, this year. There are 50 acres in bearing and 25 acres of new plantings. Next year 10 acres of loganberries will also be planted.

The Sebastopol Apple Growers' Union is closing up the season. The crop will be smaller than usual, but prices have been very good.

James Madison, manager of the Associated Raisin Co., announces that he will buy all stock of peach growers in the company in order to give peach men full opportunity to organize a dried fruit company to look after the peach crop of the State.

From the Hallberg ranch of 105 acres, near Graton, Sonoma county, there were shipped 125 tons of produce, plus about 12 tons hauled off in wagons. Among the products were 90 tons of apples, 10 tons of hops and 12 tons of berries.

The Castle Brothers packing-house and that of Haven & Co. at San Jose were destroyed by fire recently, with a loss of $150,000. A large amount of dried fruit was burned.

A report from Porterville states that quince shipments have been very profitable recently.

Calvin Miller has been exhibiting some fine fruit from his ranch in the foothills east of San Jose, in the San Jose Chamber of Commerce. He claims that there are great opportunities in fruit growing in the foothills, especially citrus fruit.

Horticultural Commissioner S. A. Pease of San Bernardino has completed figures on fruit acreage in his county, there being 38,596 acres of oranges, 4198 of lemons, and 561 of grapefruit. There are also 6553 acres of peaches, 6904 of apples, 2078 of apricots, and less of other fruits. A very large part of the new citrus acreage is in the Rialto-Bloomington district, which promises to be the largest citrus district in the county. There are also about 9500 acres of alfalfa in the county.

During September there were shipped from Turlock 148 cars of watermelons, 7 cars of casabas, 55 cars of sweet potatoes, 25 cars of cantaloupes, 73 cars of wine grapes, and 16 cars of hay. This is less than 1912 shipments by 39 cars.

By October 20, 1913, shipments of deciduous fruits from California amounted to 11,884½ cars, while total shipments to same date, 1912, amounted to 12,025¾ cars.

Henry Markarian, one of the leading fig growers of Fresno county, has had such success with the Smyrna fig that he is intending to graft over 40 acres of White Adriatic figs to the Smyrna.

News from the Vineyards.

Raisin shipments during September amounted to 11,000 tons this year against 8000 tons in September 1912. The season was late last year, which partly accounts for the difference. It is stated that raisins were moving this month at about 1000 tons per day. The Pacific Coast Seeded Raisin Co.'s plant is being worked to a capacity of about 240 tons per day.

Shipping of Emperor grapes has begun from Fresno county. Some are going out in drums for storage purposes. Some Malagas are still going out, and prices are very high, as is the case with most table grapes.

Reports from Fresno county are to the effect that second crop Muscats are bringing $14 per ton.

The Knob Hill Vineyard Co. has completed the erection of a large grape packing house two miles southeast of Lindsay. This is the only exclusive grape-packing house in Lindsay. The company expects to ship 45 cars from its 52-acre vineyard of Emperor grapes. The fruit will be packed in redwood sawdust.

The vintage season at Cloverdale is closing. The crop was less than usual, and some trouble was experienced with "stuck" tanks early in the season, no such trouble occurring later when cooler weather came. Prices were about $25 per ton, occasionally higher.

A consular report from France, written in September, states that the French wine-grape crop promised to be short this year and the quality below the average also. The yields of most tree fruits have also been below normal.

Hauling of the second crop began at Sebastopol about October 20. The price was $16 per ton for grapes testing 18 degrees or higher.

Citrus Notes.

The Butte County Citrus Association has decided to send out no sweated fruit this year. No trouble was experienced last year, but it is thought better to ship only fruit as good in appearance as in quality. A movement is on foot to have a general State standard set for orange ripeness.

Members of the Citrus Protective League in Tulare county are also taking steps against the shipment of immature fruit from that district. A circular is being signed pledging growers not to ship fruit before November 5, and then to ship only fruit mature and well colored. An attempt is being made to keep packing-houses from receiving immature fruit, thus protecting all growers from a few who would make profits at the expense of the reputation of the district.

Citrus packing-houses in Butte county are getting ready for the opening of the season. The season will close before December 15 probably, owing to a crop shortage.

The first car of lemons from Tulare county this season left the Kaweah Lemon Co. last week.

The Tulare County Citrus Fair will be held in Porterville, December 11 to 20. The building will be about 90 by 265 feet in area.

The Strathmore Citrus Association has received an offer from an independent concern for the packing-house, but has decided not to sell and will pack the fruit of members.

Prospects look favorable for the reduction of the freight on cull citrus fruit in brine to the East to be made into citrus by-products.

Dr. H. J. Webber, dean and director of the School of Tropical Agriculture of the University of California at Riverside, announces that he considers the mottle leaf the most serious problem facing the citrus industry today.

Special efforts are being made to have a large representation of northern-grown citrus fruits at the fourth annual National Orange Show, to be held at San Bernardino February 18 to 25. Last year the northern oranges attracted great attention and this year more and larger displays will be made.

Complaint has been filed with the Interstate Commerce Commission that several railroads have refused to furnish the proper facilities for fruit shipment, also requesting that the minimum on refrigerator cars be reduced from 26,000 pounds.

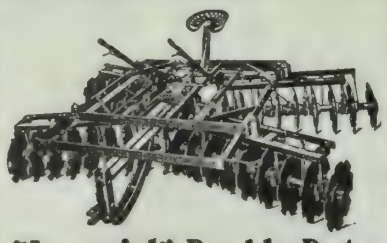
General Agriculture.

The threshing season for lima beans has passed and shipments in good quantity started East. About $4.85 per hundred is being realized by growers.

Large quantities of Nevada potatoes are being purchased by California dealers. Prices of $18 to $20 per ton on the cars are reported.

Hop shipments are being made in good quantity, with 25c the regular price. A few growers hope for still higher prices.

News about rice comes in from several points. From Gridley it is reported that 40 binders are busy in rice fields west



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of Gridley and Biggs. The yield is fully up to expectations. Prices are good, having recently gone up quite a little. The Moulton Irrigated Land Co. will harvest 50 sacks per acre of Italian rice and 65 sacks of Japanese rice, according to statements from Colusa county.

Henry Bowers, gardener for the city hall at Chico, has found a white tomato. The quality is excellent, but seeds are scarce.

D. E. Kelliher, of Eugene, Stanislaus county, reports to the Oakdale Leader excellent results from deep plowing. He plowed some land five inches the first time and seven inches deep a second time. While the average yield of land plowed the regular way was eight sacks, that plowed as above was said to be 13 sacks. A good deal of difference was seen in the soil as prepared by the two methods.

The crop of lima beans, according to a report made by J. M. Waterman to the directors of the Association, is the smallest for three years. He states that there was less trouble with worms, bugs, excessive heat, winds and rains than there has been for a number of years, but although the vines grew well the pods did not form as liberally as in past years.

Light frosts in the San Joaquin valley have slightly nipped some sweet potato vines, but no injury has been done to grapes.

Soon K. Rhee, a Korean from Stockton, has leased a large part of the old Keppel place, near Gridley, and will plant 1,000 acres to rice next year.

The sugar factory at Hamilton will not run next year, in all probability, owing to low sugar prices and bad outlook for sugar.

The Holt Manufacturing Co. has received a cable telling that its "caterpillar" has been awarded a prize of $15,000 in a traction engine contest just held by the Argentine Republic. The first, second, third, and fourth prizes were won by American machines.

On a demonstration run at Richvale, recently, 47 to 48 sacks of rice per acre were secured, 110 pounds per sack.

It is said that the yield of Egyptian corn on the Lake lands in Kings county will be close to 60,000 sacks.

Mrs. P. Mooradian is intending to plant a large part of her 40-acre ranch near Laton, Fresno county, to Turkish tobacco next year.

According to the Newman Index, a large amount of planting of grain has been started already on the West Side.

Between 10,000 and 15,000 acres of wheat is being planted on the black lands in the Nelson section, Butte county, which is more than usual.

A tract of 640 acres in western Tulare county on the Murdock ranch has been turned into a seed farm under the direction of a Los Angeles company.

The Frankenheimer brothers are preparing 450 acres of land on the former Threllfal ranch, six miles east of Oakdale, for alfalfa.

Irrigation Progress

Norman B. Smith, a civil engineer of Red Bluff, has submitted to the Chamber of Commerce a plan to obtain water from two reservoirs on Cottonwood creek and irrigate a large acreage in the Burr valley section. The cost would be $1,500,000.

The idea is gaining ground around Tulare lake that the large amount of irrigation by pumping from wells in the vicinity will prevent the water from rising in the lake as high as it otherwise would, thus protecting from flooding the land now reclaimed.

At the University Farm at Davis this year 1,800 pounds of wheat per acre was harvested from land given 10 inches of water in two irrigations. Unirrigated land gave only 127 pounds of grain, one two-inch irrigation 560 pounds, one four-inch irrigation 1315 pounds, and six inches applied in two irrigations 1,609 pounds, and two four-inch irrigations 1,632 pounds. The experiments will be repeated, but show a great benefit from irrigation as it is.

Work is being rushed on five big 50-inch pumps at Rough and Ready, Colusa county, which will be used to drain District No. 108.

The Supervisors of Stanislaus county have admitted 1,396 acres to the Oakdale irrigation district. The engineer reports the tunnels in good condition, although some dirt has slid down into the canals. There will be needed about $298,678 to complete the distributing system.

In the reorganization of the Kuhn properties throughout the United States it has been decided to have all irrigation companies separated from properties of other description.

At a meeting of the directors of the Hallwood Irrigation District, Yuba county, held recently for reorganization purposes, it was decided to permit no one but stockholders to secure water from the ditches.

Boundary lines for the proposed Merced Irrigation District have been tentatively decided upon. About 50,000 acres of the Bliss and Chowchilla ranches will probably be included in the district, making it contain 325,000 acres. Part of this is in Madera county. There is said to be sufficient water for all this.

The Department of the Interior and the Reclamation Service have been considering the proposed irrigation district near Montague, Siskiyou county, and are said to be favorably impressed with the proposition.

The proposed irrigation district south and east of Oroville will cost $1,500,000 and comprise 60,000 acres.

A meeting of the water users under the Fresno Canal & Irrigation Co. was held recently and tentative rules for the distribution of water made.

The California Telephone & Light Co. has contracted with a number of farmers in the Coyote, Redwood and Potter valleys, Mendocino county, to supply electric power for pumping, and as a result about 500 acres will be checked for alfalfa next spring and irrigated by pumping.

The Department of the Interior has agreed to shut the gates at Klamath straits, in southern Oregon, thus preventing the entrance of water to Klamath lake and reclaiming a large amount of marsh land at the edge of the lake.

Miscellaneous Items.

The report of the Hygienic Laboratory of the State Board of Health states that there has been a great increase in rabies in California the last year. Seven persons died of the disease during the year and 269 persons received treatment to prevent it.

Members of the Tulare Co-operative Poultry Association received $3200 for eggs and $300 for poultry during September. The average price of eggs secured by the association was 35 cents per dozen.

The Placer County Growers' Canning Association dedicated the new cannery at Lincoln last week with a picnic, a number of leading fruit men of other parts of California being in attendance.

During the coming season, 125,000 plants will be shipped from the U. S. Plant Introduction Garden at Chico.

The plant of the Sacramento Valley Sugar Co. will be closed the coming season, but will probably be operated after that.

The Bosse ranch near Auburn, Placer county, has been odrered sold by the court.

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WANTED—Position (by American, age 36 and married) as superintendent on a stock or dairy ranch. My experience covers general farming, certified dairying, planning, erecting and equipping farm and dairy buildings. Experienced in handling pure bred stock of all kinds. Address T. L. Springer, Hotel Yuba, Mission St., San Francisco, Cal.

WANTED—Agents to sell the Hamilton line of Orchard Heaters. Hundred carloads sold this season to southern California growers. Most practical, efficient, popular heaters made. Thirteen styles; capacities two to nine gallons. Hamilton Orchard Heater Co., 742 Consolidated Realty Bldg., Los Angeles, Cal.

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WANTED—Burbank standard cactus leaves; highest prices paid. Address Sempervirens Cactus Farm, Santa Rosa, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

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I represent a tract of land now being divided. It is in Tulare county with foothill protection on three sides. The soil is choice, without trace of alkali. Water is obtained at 100 feet with a lift of 15 to 25 feet. Electric power is cheap. A new railroad is now building through the tract and a new town site will soon be dedicated. No portion of the tract will be more than three miles from railroad station and packing house. 20 acres of this land can be made to yield an income of $2000 to $4000 annually. 10 acres can make a good living for a family. The price averages about $150 to $160 an acre—some lots lower, a few lots higher. We ask cash payment of one-fourth the purchase price, then wait six years for the balance. Low interest. Send for our illustrated booklet with map. There are special reasons why you should buy in the next six weeks—ask me why. W. P. McKEE, 546 Title Insurance Bldg., Los Angeles.

FOR SALE—42 acres in Subdivision No. 1 in River Garden Farms; 1200 feet of river frontage on Sacramento river; hog-tight fence; 15 acres in alfalfa; three wells of No. 1 water, windmill and tank; 10 acres of second growth oak timber; good dwelling, barn and outbuildings. A No. 1 place for a dairy. Price and terms, A. J. Clark, Grimes, Colusa Co., Cal.

Small dairy ranch on Sacramento river, 25 miles from Sacramento; no better alfalfa on earth. Electric line building within a mile. $500 to $1000 down. No agents will be interviewed on this. Address W. F. Sandercock, 23 Montgomery, San Francisco.

FOR SALE—In Turlock irrigation district, 40 acres best irrigated land, well improved; fine stock; part cash, rest terms. For full description, address owner, A. M. Gastin, Ceres, Cal., R. 1.

FOR SALE—30 acres of my ranch, 3 miles from Modesto, ¼ mile from State highway, near grammar school. Land owns the water. Reasonable for cash or will give terms. Box 64, R. 5, Owner, D F. Conant, Modesto, Cal.

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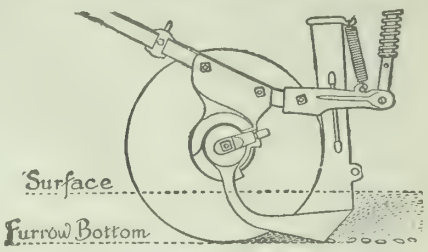

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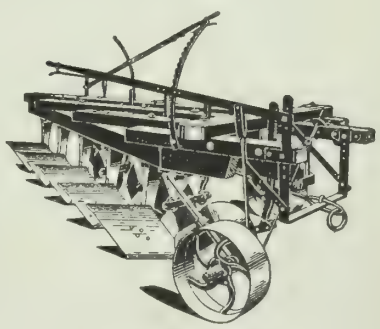

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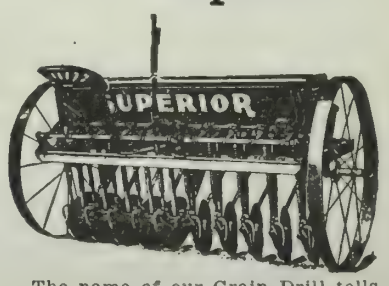

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How to Grow Thornless Cactus.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Every new creation meets with many disappointments and failures due to a lack of understanding, and there is no plant which has, perhaps, gone through more stages of this in a short time than spineless cactus.

There are very few farmers, and especially stockmen, who have not taken a keen interest in the progress made, as it is thought to be one of the greatest feeds yet discovered for semi-arid countries.

Perhaps no one in the State has at the present time a more thorough knowledge of this plant's worth and the cultural methods to use with it, than Charles Welch, of Los Banos, who has several acres of the different varieties, and who has also had the most extensive experience in feeding it.

As a great many seem to have trouble in growing the plant, it might be well to give the methods recommended by this man, which are: first, to select soil with good drainage. The character of the soil is not so essential, but the better the soil the better the cactus. Second, the land should be thoroughly cleared of all vegetable matter, for if this is not the case, it will, when plowed under, decay and start the same process in the newly planted slab. This is perhaps one reason for a good many failures, and great care should be taken that it does not happen. Also, no manure or other fertilizer should be in the soil, or the same trouble will occur.

After clearing the land, it should be plowed good and deep, eight inches or more, and then harrowed. If the planting is done in the spring, after winter rains have supplied moisture, all well and good; but if late plantings are to be made, the land should be irrigated before planting, the same as for alfalfa.

With plenty of moisture and a well made seed bed, the field is laid off in rows, seven feet apart, and the slabs are planted three feet apart in the row, giving the plant plenty of room for spreading later on. At this distance apart, approximately 2000 plants may be planted to the acre. In planting, one should be very careful not to bruise the cutting or the rotting process soon sets in; also, freshly cut slabs should not be planted until the cut end has laid in the sun to heal over at least one day. The planting, on this place, is done with a spade, and care is taken that no vegetable matter, such as straw, gets into the hole; also, as before stated, not to bruise in setting.

Ordinarily, the only care necessary after planting is two hoeings, which is done to keep down the weeds and to cultivate around the newly planted slabs; but on account of such a small rainfall last winter, the new plantings were irrigated this year, but we were told that this has never happened before in some four years' time.

Those places where the cactus has been planted several years do not require irrigation or cultivation in this district, but as with the soil, the better the care the better the cactus. It should also be said that when hoeing great care should be taken not to cut into the slab below the ground, or if that is done, to dig the soil away from the cut place and allow the sun to heal it over; otherwise it will be killed through the rotting process.

There are a great many varieties, some being great fruiters and others being strictly forage, while some are between the two extremes; and it is Mr. Welch's opinion that the two varieties, Fresno and Sonoma, will become the most practical, as they produce good-sized slabs and plenty of them, and also a good-sized quantity of the fruit. The reason a dual purpose variety is considered best is that the slabs furnish a wonderful growing feed like alfalfa, but do not fatten, while the fruit is more like corn: a good finisher.

Just how many slabs will grow on a plant in one year has not been practically arrived at, but Mr. Welch considers ten a conservative figure, and judging by the patches we saw, we should say this amount was very conservative.

The average of all slabs tested weighed two pounds, so anyone with a mathematical mind can figure out the yearly production to suit himself and feel sure that he is well within bounds of a sane statement.

One feature which everybody is vitally interested in is what the feeding value is of this plant and in this respect very little has been done of any importance, except an experiment carried out on one cow by Mr. Welch.

This was a pure-bred Holstein, taken from his herd, that had been on a straight alfalfa ration. At first 10 pounds of cactus, cut up and mixed with bran, was fed, the bran being added to get her to acquire a taste for the cactus. Alfalfa hay was also before her, and the rule was to add more cactus every day and cut down the other feed. This was continued until the animal was consuming all cactus, preferring it to the alfalfa hay. The trial was carried on for several months, and after the cactus became the only feed the milk was weighed and tested, and the production was found to be equally as good as when fed on alfalfa alone before the test. This cow is an exceptionally large cow, and also a naturally big producer, which is no doubt the reason that she consumed in one day during the test over 175 pounds of cactus.

The following year the same cow was tried out by feeding freshly cut green alfalfa and cactus to see which she preferred. It was found that she would eat that kind of alfalfa in preference to the cactus. Whether this was due to her having been used to the alfalfa and not the cactus, is not known; however, Mr. Welch states that after his first test he became satisfied that it is a good economically grown forage plant for stock feed.

As the present price of cactus is something like $300 per ton for propagation purposes, it is not hard to see why more experimental feeding has not been done, which would seem to be the one weak spot in its development.

When asked what he considered the merits of it are for planting on ranges or other places where it is to be used for grazing, Mr. Welch said that there were two serious objections to its use in that way: first, that it was not likely that the proper care could be given it the first year, as for instance protecting it from wild rabbits and hoeing it; and secondly, if it were raised successfully, the stock in grazing would break it off in rubbing against it and also waste a great deal in eating it. It would seem, then, that for cattlemen to get the most out of it, the best plan would be for them to fence off the fields where it is planted and cut as fast as fed, which would be a great help in carrying cattle after the wild feeds are gone, or, for that matter, carrying them through the entire year.

It would seem that the two big features favorable to cactus growing are that it supplies a green succulent feed at any time of the year and will produce in larger quantities than any other known plant, cost considered.

Undoubtedly, cactus has a great future, but farmers must first choose the most suitable variety and then know how to care for it, and while it is easy to grow if you know how, it will not do its best unless properly cared for.

RESULTS OF A SMALL FOUNDATION.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

It is generally conceded that the best way to make a start with pure-bred livestock is to purchase a few head and grow up with the business. At the present time the demand for registered stock is so good that the young breeder is apt to get ambitious, and, feeling that he is growing too slowly, go in stronger than his experience would warrant. This condition often causes many discouragements, and while it is the most facinating, the slower method usually brings the best results.

An instance of success by the slower way may be seen on R. F. Guerin's ranch in Tulare county, where there are now about 125 head of purebred Holsteins.

Mr. Guerin purchased five head of purebred females about ten years age from the Hotaling herd in Marin county, and has since that time been able to accomplish good results by reserving his female stock and purchasing high-class sires. The present herd sire is Arcadia Pontiac Wayne Hengerveld, a four-year-old purchased from Dr. Arcadia of Goshen, New York. That he was wisely chosen is demonstrated by his heifers, some having recently come fresh which have done remarkably well for two-year-olds. The ranch itself contains 180 acres, mostly seeded to alfalfa.

This year, like many other progressive dairymen over the State, he erected a new silo which will be filled with corn ensilage.

Until the present year no official testing had been done, but from now on it is the intention of the owner to go in for better balanced rations and testing in order to get the maximum returns.

When one considers that this entire herd has practically been developed from a foundation of only five females in 10 years time, it would seem that the young breeder shold not be discouraged simply because he hasn't acquired a large herd in a short time.

BEEF FROM HOLSTEINS.

The amount of beef and veal that will come from dairy herds is a matter of great interest these days and the more meat that can be provided by dairymen without affecting the milk production or profits injuriously, the better. It seems unlikely that any material change will come in dairy breeds on account of the demand for beef, but it will certainly affect methods of dairy management.

The Holstein, of course, is the cow of straight dairy breeding that gives the biggest returns on the side for beef and veal and the way that Holstein men in Holland work the beef and veal proposition will indicate the way that it will without doubt be sooner or later worked here with possibly some modifications. It will not be so managed in all probability until the dairy industry here has made nearly its full growth and heifer calves are raised mainly to take the place of their dams. By this method it can be seen that a dairy can turn off quite a bit of veal and beef in a year to ward off a meat famine. The plan is taken from an address delivered a number of years ago by I. P. Roberts of Cornell University and summarized by a correspondent in the Holstein Friesian Register.

First, the male calves are all vealed except a few choice ones which are preserved for breeders. Second, about half of the female calves are also vealed, the remainder are choice ones and are preserved to fill up the dairy. By this means in a dairy of 30 cows there would be seven to eight two-year-olds added to it each year. These calve early in the spring and are carefully tested; perhaps five of them will be found to be really superior. These are preserved and the inferior ones are dried off early, fattened and sold for beef.

By this plan the dairy would virtually be composed of 5 animals two years old; 5 three; 5 four; 5 five; 5 six, and 5 seven years old. The remaining cows would have to be sold to make room for the heifers in order to keep the dairy down to 30 cows. They are fattened on grass and cattle feeds imported from America.

Prof. Roberts also said: "I have tried this Holland system for several years and I now think I may say that I know it is a superior one, and that it is well adapted to many American dairies. I know that constant selection and weeding out is the method by which the dairy cow is to be improved. I know that there is more profit in good-ribbed straight young cows than in small Gothic-ribbed old ones. I know that as a rule a good milk cow can be raised cheaper than she can be purchased and that there should always be plenty of good ones coming on to take the place of discarded cows; and I know, too, it is quite possible to have it so planned that the young ones will make better cows than the old ones, so that there need be no hesitancy about selling even a good cow before she becomes aged and measurably worthless for beef, for there should be a better animal always ready to fill her place."

By this plan it can be seen that on a 30 cow dairy when everything works perfectly there will be about 15 bull calves to veal a year, about seven heifer calves (the poorest calves), two to three young cows which have had only one calf each and five old cows, not too old to make

good beef. All this is done on a system that makes for the best dairy management and steadily improves the standard of the cows kept. It can be done with other breeds than the Holstein, but the better the breed for beef the better this side of the dairy will pay.

Keeping Machine Milk Clean.

[By Our Associate Editor.]

The rapidly increasing popularity of the milking machine is one of the marked features of present day dairying. The only reason that this popularity did not come before is that inexperienced handling and lack of care in keeping the apparatus clean gave milk with too many impurities, and it soured or otherwise deteriorated too rapidly. Clearly, therefore, the danger of introducing impurities into milk is still the most important trouble with milking machines, and so the methods found recently at the South Dakota Agricultural College by which the milk could be kept as pure and sweet as under the best of hand milking and all the other advantages kept, provide one of the most valuable series of experiments that could be made for dairymen.

Ordinary machine milk is far cleaner than hand milk in certain ways, and often to it in other ways, simply because there are two main classes of impurities to avoid. The one is the visible kinds of dirt, hair, flakes of skin, etc. These are practically never found in milk drawn by machines. They naturally carry bacteria in large amounts and cause souring or other injury to the milk and should be prevented from entering whenever possible.

The other impurities, in fact the one main kind, are the bacteria, for it is mostly through those that solid impurities are injurious. These are floating in the air, covering particles of dust, hair, manure, and are almost everywhere. They are the ones that cause milk to sour rapidly or to take on bad flavors, and really are the things that the main effort is to avoid. How to avoid them was the main point of the experiments.

Everybody knows that the worst thing for the milk in handling a milking machine is to let old milk stay on it, in other words, to be careless in cleaning the rubber tubes and other parts of the machine. This is disastrous, and every satisfied user of milking machines keeps all apparatus in excellent shape. Even when the cleaning is thoroughly done, however, there are two ways that numerous bacteria can still enter the milk. One is by floating onto the tubes from the air between milkings. The other is to get into the milk from the air while the machine is in operation. Both sources of bacteria must be avoided.

The way that bacteria enter the milk from the air, no matter how clean the apparatus may be, is clear to everyone who has seen such machines in operation. The suction power on the teats comes from air pressure being partly withdrawn and there is a current of air from outside of the apparatus passing through the milk on its way to the pail. This air, as before stated, contains numerous bacteria which would not reach it with good hand milking, and many of these are left in the milk. Thus it happens that with the cleanest apparatus and only ordinary management machine milk contains many more bacteria than milk drawn by hand under ordinary good conditions.

For illustration, with good hand milking into covered pails in these experiments there were 10,739 bacteria per cubic centimeter (15 drops), which was very clean milk. Under ordinary care machine milk gave 500,000 bacteria, which was reduced to an average of 57,700 bacteria under proper handling of machines. In fact the latter figure is too high, owing to an oversight during the latter part of the period, and for the first half the average was a very little more than 5000 bacteria, about half as much as with the best hand milking.

Care of Tubes.—The ordinary care of the tubes was such as was recommended by the manufacturer. They were cleaned according to directions and hung up to drain and dry. While drying, bacteria gathered on them and entered the milk. It was found quite a little better to clean according to directions, but to let them stand in some solution that would prevent impurities touching them until milking time came again.

A saturated solution of common salt was used in one case, which was a great improvement over the ordinary way. A 2½% solution of formalin was used in another case and was very effective. This is a food preservative, prohibited by law, and little if any should be permitted to enter the milk, though the amount that would ordinarily reach the milk would be too small to be noticed. A 5% solution of chloride of lime was next used, which was also very effective. Either of these three seem to be much better than simply cleaning the tubes and letting them stand until milking begins again, but, even so, there is a large amount of contamination going on in spite of this.

Straining the Air.—The greatest chance for improvement is in the use of cotton filters where the air enters the apparatus. These served to remove from the air a large part of the bacteria contained and therefore left the milk in better condition. In the latter half of the period they got loosened and thus the air was not filtered properly.

The method of arranging them is described in the report as follows: "Cotton filters were placed over all of the air inlets to the pail. One filter used was made by using a small funnel filled with non-absorbent cotton. Cheesecloth was tied over the mouth of the funnel. With a small piece of rubber tubing this funnel filter was fastened to the small extension air-vents in the engine have no extension, they were supplied with filters by fastening a suitable thickness of cotton filter wrapped in cheesecloth directly over the opening.

"These cotton filters reduced the bacterial count of the milking machine milk to a considerable extent. The increase of the bacterial content during the latter part of the period is undoubtedly due to the filters being little too loose. Considerable care is necessary to have the filter properly made. It must not be so firm as not to permit the proper amount of air to pass through, and thus interfere with the proper work of the pulsator, and yet it must be sufficiently packed to thoroughly filter the air and retain the dust particles."

The report also states: "Another important source of germ content of milk drawn by milking machines is the condition of the rubber tubes and teat-cups. The trouble from this source can be lessened in two ways. First, all the rubber parts should be well cleaned in lukewarm water and rinsed in hot water. Steam and extremely hot water shorten the life of the rubber. Keeping these parts in a solution of calcium-chloride and common salt between milkings is an effective method of handling these parts in a sanitary condition. Second, when the rubber begines to crack and check, new parts should be secured. Old overheated and cracked rubber is sticky. When in use this rubber spreads and allows milk to enter the openings. These crevices are difficult to properly clean and become a dangerous source of infection."

The gist of the whole matter is this: Milking machines have proved very satisfactory and have come to stay, even with ordinary care and cleanliness. There can be a remarkable improvement made by first keeping the tubes in a solution like one of the above after the usual cleaning and secondly, by filtering the air that goes into the intake.

HOG FEEDING AND TEPARY BEANS.

To the Editor: I have noted several inquiries in regard to feeding hogs. The past three years I have raised my own winter meat. The first year I did not keep track of my feed bill, as I fed mostly barley and potatoes. The second year my hogs cost 6½c live weight, and my ham, bacon and lard cost 12½c.

I buy two pigs in October or the first of November, and have them ready by Christmas. Last year I paid 7c; fed middlings and cocoanut meal, one bale of alfalfa hay, half a sack of cracked corn, and my winter's meat cost 10½c per pound. Where one has milk or other waste, the bill might be lower. The secret is in not feeding coarse feed and I have no green feed in summer.

The Tepary bean does well in this soil, and the common garden bean had only two or three pods on a vine; neither did tomatoes make any growth this year. The seed may be secured from the Tuscan Seed Co., unless some of the California seed growers handle it. The beans are delicious cooked. We thank your valued paper for an introduction to this new vegetable.

Raymond, Cal. A. O. Nelson.

HOW THE MULE STANDS IN CALIFORNIA.

[Written for the Pacific Rural Press by J. C. Loomis.]

Perhaps no other farm animal has more ups and downs than the much-abused mule, and yet it is one animal that always has a good money value if it has sufficient size and a strong constitution.

The present year is considered one of the down ones on account of weather conditions which have made feed scarce for the farmer, and the general slump in large development enterprises throughout the West, for it is largely due to these two factors that our mule market is dependent upon for home consumption.

While speaking with one of the State's pioneer mule raisers, the question arose as to what in his opinion the future outlook for mules is in California. His reply was that, while the tractor engine had replaced large numbers of mules on the larger farms, and machinery had greatly lessened the number used for excavating and similar work, his experience has been that the mule market is very much like the horse market, inasmuch as good-sized mules free from blemishes always brought good prices, but that small, undersized, scrub stock does not fare so well.

The subdividing of our large ranches is also given as a prospect for a future mule market, as it is generally conceded that the small farmer will have to depend upon horses or mules until some improvements are made in the mechanically driven power implements that will make them entirely practical for the average sized farm.

While it is true that most farmers prefer horses for general farm work on account of their being more desirable to handle and due to their breeding qualities over the mule, it has long been known that the mule will outwork the average horse with a great deal less feed and care.

As an instance a large grain farmer in the Sacramento valley tried working a team of well bred heavy horses on his harvester, the balance of his team being mules. The stock was all given the same feed and care, but before the season was finished the horses were found to be in poor condition, while the mules were doing finely.

One reason for supposing that the future small farmer will use many mules is due to this economical feeding feature, for it is natural to suppose that grain and hay will on the average never be cheaper than at present. Besides our own home consumption, we have in California a fairly good export business, especially to the Hawaiian Islands, where large numbers of mules are used on sugar plantations, but at the present time exporters have so much trouble and expense in finding strictly first-class mules that the market has never been fully developed.

Seemingly, the great trouble with farmers who atempt to raise mules is the lack of knowledge used in breeding, which greatly handicaps the production of high-class animals of any kind.

While talking with the above mentioned breeder, his views were given as to which method of breeding he found most successful. He stated that in his opinion the best mares to breed to jacks were those resulting from a cross of a Shire stallion and a standard-bred mare. The reasons given for good results from such a dam are that the standard-bred mare furnishes life and action, while the Shire blood brings out the size of the bone and constitution, all of which are necessary points for the higher priced mule to possess

At the present time there are many high-class jacks owned in this State, and there is no apparent reason why the future of mule raising should not be a profitable undertaking by farmers if good common sense is used in the breeding of them.

One thing is certain—as long as there is development being done, the mule will hold his own, and with the amount of development still to be done in California the mule is pretty certain to hold his own, even if he does do a seemingly unnecessary amount of kicking over his predicament.

Silage Feeding Practices.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The feeding of corn ensilage will be of more importance to large numbers of our dairymen this year than ever before, on account of the increase in numbers of silos erected.

The general practice on many ranches where silage has been fed heretofore is to feed it in connection with alfalfa hay, the amount varying from 30 to 40 pounds per day, according to the capacity of the animal being fed.

A noticeable fault with many of the silos put up this year is a lack of chutes or some such arrangement to carry the ensilage from the top doors to the ground, as without this the ensilage is apt to spread over the ground, and this is especially bad in windy or muddy weather when the loss is most apparent.

By having some way to overcome this, a cart or four-wheeled truck is about the best vehicle to convey the silage into the barn or other feeding places. The location of these feeding troughs depends upon the dairyman, some preferring to feed outside the milking room, claiming it is more sanitary, while others feed in the milking barn the same as they do alfalfa hay.

While outside feeding is considered much more sanitary, and is essential where the bacterial count is to be held down, the ordinary feeding methods used with straight hay ration are generally practiced. Most authorities claim that the proper way to feed ensilage is to milk first and then feed, and if this is done, it is very necessary to use feed troughs outside of the milking barn.

If not fed too liberally, a cow will clean up her ration entirely, and no foul odors will be noticed around the trough, but about the safest way is to first put in the hay and then spread the ensilage on top. If there are any juices, the hay will absorb them in this manner, and the trough is kept perfectly clean.

As to the proper amount of ensilage to feed per cow, it may be said to vary according to the animal, the same as other foods; but a very good working example was tried out on J. L. Jameson's ranch, in Tulare county, last year. At the time there were 23 to 25 head of high-grade Holsteins being milked, part heifers and part mature cows, which were given a daily ration of 30 pounds of ensilage and five pounds of alfalfa hay. On this ration the herd average was $11 per month for the entire winter. This could have been increased to 40 pounds of ensilage or cut down to a much smaller one, according to the length of time one figures on feeding.

It may be said that the average cow will consume between 30 and 40 pounds a day, and it is a good idea to give her a liberal amount of alfalfa in connection, for if she is of good dairy type one can rest assured that the extra feed will come back through the milk pail. It is usually considered a waste to feed ensilage to hogs, as they only eat the kernel part and waste the balance.

SILO QUESTIONS.

Would a silo be practical if built on a steep hillside slope as accompanying diagram shows? Must a silo be free from air in order to preserve silage, and is a silo always emptied from the bottom? In cases where silage becomes rancid, is it caused from exposure to air in top or bottom? What sort of doors are used to empty and fill in order to make a silo airtight?—Enquirer, Edgewood.

ANSWER BY J. C. LOOMIS.

From your illustration we take it that your plan is to so construct the silo that it leans against the hillside. If this is the plan, would say that while we have never seen one so constructed, we would consider it unpractical. On the other hand, it would be feasible to build on such a location if a perpendicular silo was used and with sufficient leveling or perhaps cutting at the base for room to place the cutter, and allow room for wagons to unload, it would seem that a hillside would be as good as any other place.

Silos are never emptied from the bottom, but on the contrary from the top, either a continuous or panel door system being used, both of which have been fully covered several times through these columns recently.

As will be noted in another column, rancid silage is usually caused by cutting the corn before it is properly matured. Any of the legumes, when used in this way, are apt to be foul smelling, and are for that reason undesirable in many instances.

To make good silage, the structure must certainly be air-tight, otherwise the ensilage rots instead of fermeting, just the same as sauerkraut. Write to our advertisers for silo plans, and you will learn by illustrations and otherwise much about silo construction and silo methods.

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Horse Breeders Should Organize.

We have received a letter signed "Fair Play" and also a visit from the writer regarding a situation in the class of aged Percheron stallions at the State Fair. The matter has also come up from other quarters and depicts an unfortunate condition of affairs. The gentleman states that the horse that stood first was foundered, which is not especially to his discredit as a breeder, or at least, it is not considered in the State Law as being anything to call for disbarment for registry, like ringbone and a number of other ailments. The horse that stood second, according to our visitor, was windbroke, which should, according to the State law disbar him from registry with the Stallion Registry Board, and therefore make it unlawful to use him for breeding for hire. The horse, however, was not only permitted to be shown, but goes before the public as worthy of high credit as a prize winner in competition with the best horses in the State. As an explanation of such awards Judge Caine is said to have stated that the aged Percherons were an indifferent lot.

There are two big injustices done if this is the case, one in permitting a wind broke horse to go before the public as a horse of high standing when the law if properly enforced would prevent his being used for public service, and secondly, the inference that the best California Percherons were an indifferent lot of horses, not a very encouraging thing for the owner of mares who wanted to raise the best colts he could get.

The actual facts about the quality of the stallions shown in this class is stated in the letter as follows:

"Now it seems a pity and a great loss of time and money that outside of the first and second prize winners all these animals have been selected to head a bunch of registered Percheron mares in this State, and if our recollection serves us right, there was in all about 10 animals exhibited in this class.

"In third, fourth and fifth positions we noted horses owned by Titus, Bond and Bassett, respectively, the latter a third prize winner in Chicago, and the other two horses that are always taken into consideration wherever shown.

"Now it seems to us, whilst we grant that none of these three specimens are faultless, Judge Caine never tackled the game of breeding, otherwise he would allow for discrepancies which arise in such a business, or more probably he is not in love with this particular breed of horse.

"Now that Judge Caine has thrown the gauntlet to this particular class, we would be glad to hear of the particular deficiencies of this class separately, and if it is not fresh enough in his mind to analyze the same, we will endeavor to refresh his memory."

If bad conditions exist they should be remedied and the only way to remedy them is for the people whose business it is to get busy and do something. If such a situation as is described here actually did exist, the horsemen of the State should bestir themselves and see that two things are done. First, that the rules of the State Fair affecting horses shown are regarded, only fit horses shown and judging properly done. Secondly, that the stallion law is enforced, which will not permit a horse with an unsoundness prohibited by law from being stood for public service. They will then greatly benefit themselves and confer an inestimable benefit upon the State. No law can be enforced without some such public backing.

Horse breeders from all over the State were at the Fair and know just how matters stood, whether as they should be or as they should not be. If anything is going to be done it is time to do it, and the way to do it is to get together, form a State Horse Breeders Association and get the machinery started.

ADVANCED REGISTRY.

To the Editor: It is now time to call the attention of Holstein-Friesian breeders to the changes made at the last Annual Meeting in the relations existing between them and the Advanced Registry office while official tests are in progress. From the beginning of the official test, probably in order to encourage our breeders in such work, it has been considered that a breeder had a vested interest in the results of his tests, and that he was privileged to keep the results of such tests from the public, and to use the thirty day interval allowed for reporting tests in the obtaining possession of as many relatives of the cow tested as might be possible. So for many years, while I, as Superintendent of A. R., have required all breeders making tests with productions above certain minimums to keep me advised as to the productions from day to day, in order that verification tests might be ordered when desirable. I have held such reports and all other knowledge that came to me as strictly confidential.

Holding that it is an oversight of the Advanced Registry Office and acceptance by that office that makes test valuable, and because it is claimed that abuses have arisen under the old system that have resulted in others than the owner reaping the advantage, the Association at the meeting in June adopted a resolution that abrogates any and all special rights that the owner has hitherto been granted in the matter of official tests made. The resolution makes it obligatory for the owner to report the progress on all tests showing results above certain minimums, and obligatory for the Supt. of A. R. to promptly report the results of all great tests to the public. The Board of Officers holds a meeting at Chicago during the National Dairy Show, at which meeting it is expected that such amendments to the rules as may be needed to carry out the resolution will be authorized. The new rules and forms will be ready in November. It will be made the duty of the owner to report to this office, on forms furnished, the names of all cows to be placed in test with certain other information, and will provide that failure to keep the Supt. of A. R. advised of the progress of any test that may show results above a specified minimum amount may be held as cause for the rejection of such test.

M. H. GARDNER,
Supt. of Advanced Registry.

Short courses in livestock, irrigation, horticulture and viticulture will begin at the University Farm October 27. Some courses are now in progress.

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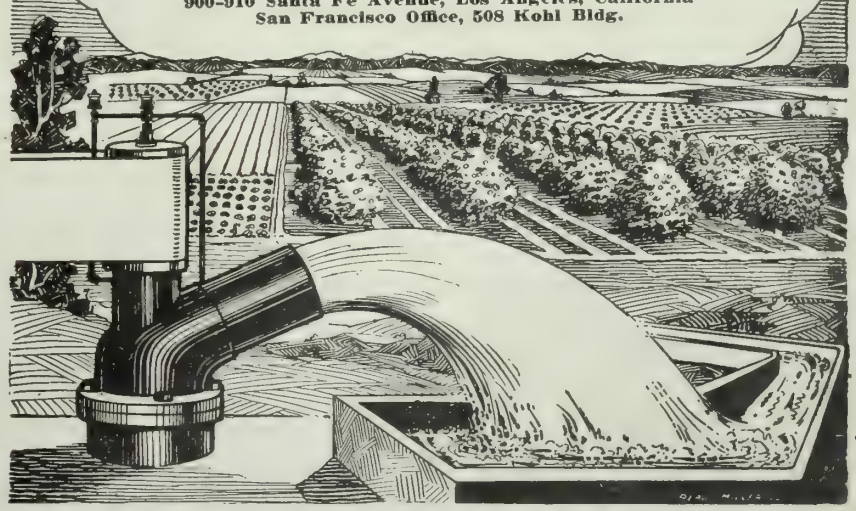

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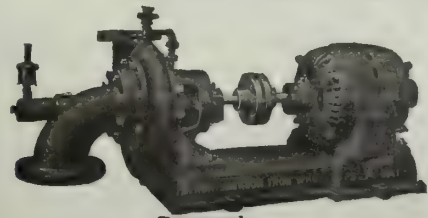

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Some Diseases of the Horse's Hoof.

Probably the oldest saying about horses is, "No hoof, no horse," for hoof troubles are more numerous than any other kind and deserve more notice. The following summary, which is taken from the Agricultural Gazette of New South Wales, will be valuable as a reference to some of the leading foot troubles, their causes, symptoms, and care.

CORN.—This is a bruise of the sensitive foot under the horn of the sole, and the seat is in the triangular space between the bars and the wall at the heel. It occurs in the forefeet, and generally on the inside. The earliest sign is a red staining of the horn, which later becomes purple, then yellow.

Cause.—Certain types of bad conformation predispose to it, namely, wide open feet with low heels, and those with flat soles, but the direct cause is the pressure of the heel of the shoe. A short shoe fitted too closely; a shoe worn too long, when as the hoof grows the shoe is carried forward and heel presses on the seat of the corn; a too free use of the knife, lowering the inside heel too much; and excessive paring, thus weakening the sole, may all cause a corn.

Symptoms.—Often shortness of step; when at rest, he shifts weight from one foot to another, but lameness is not characteristic. If neglected, suppuration may supervene, with intense lameness, and pus may work its way upward and burst the coronet, causing what is known as a "quittor."

Treatment.—The direct cause must be removed, and in most cases the shoeing requires attention, and a three-quarter shoe, plain or bar, will be found useful, and its use should be continued until the corn has worn out. In a dry corn nothing else is required. Paring out corns is to be avoided at all times, as the sole is weakened and no good results follow this practice. If pus is present, the horny sole over the affected area must be removed, and its evacuation aided by antiseptic poultices, such as a bran poultice, a little lysol being added to the water with which it is made. This should be continued for a couple of days, after which the wound should be packed once daily with the following dressing: Iodoform 1 part, boracic acid 6 parts—or with a saturated solution of iodoform and eucalyptus oil—then covered with a piece of tow and bandaged, and treatment continued until healing occurs.

In a neglected case which has evenuated in the formation of a quittor, the services of a qualified veterinary surgeon should if possible be at once procured.

THRUSH.—This is indicated by a fetid discharge from the frog. It is first noticed in the cleft of that organ, and if neglected may spread, with the result that the whole frog may slough out. It is common in badly-kept stables, where the animals stand in decomposing faeces and urine, with the result that the hind feet become affected. Horses grazing on damp pastures, or kept in wet and dirty sheds, also suffer.

Treatment.—All loose horn should be pared away if the discharge is profuse. Poulticing the feet for a day or so is advisable, after which the application of the following powder once daily will generally effect a cure: calomel, 1 oz.; calamine, 3 oz. The powder should be worked down into the cleft of the frog, and then some tow well wedged in on top of it to prevent it coming out. The above treatment can be much supplemented by using shoes low at the heels, and so allowing frog pressure.

LAMINITIS, OR FEVER IN THE FEET.—An inflammation of all the vascular structures of the foot. It most commonly affects both forefeet, rarely both hind, though one foot alone or all four may be involved. Some animals are predisposed to it as the result of defective conformation, that is, horses with flat, badly-formed feet and those with weak heels. Grossly fat horses are liable, as excessive weight has to be borne, and once an animal has had one attack he is liable to another.

Of the most direct exciting causes are errors in diet, large feeds of new grains—wheat, oats, etc.—long journeys on bad roads, causing overexertion; errors in fitting the first pair of shoes, especially if preceded by excessive paring. It occasionally occurs after severe attacks of influenza and colic, and after the administration of too severe doses of purgative medicine, and sometimes is seen as a sequel to a difficult foaling.

Symptoms.—Shivering fits, rapid breathing, blowing, stiffening of the loins, temperature up to 105° Fahrenheit, or even 106° Fahrenheit, mouth dry, lining membranes of eyelids and nostrils injected, urine passed in small quantities and high colored, and faeces pellety and covered with mucus; hoofs and coronets very hot. The animal stands in a peculiar and characteristic attitude. When forefeet are affected they are advanced, resting the heels, and the hind brought forward underneath the body; when the hindfeet are affected, the fore and hind are brought together underneath the body, and there is a great inclination to lie down; once down he lies with legs stretched out, moving them in a weary fashion, and is not inclined to rise. If all four feet are affected, the animal stands with them spread out in front and behind.

Treatment depends on the cause. In all cases, however, the shoes should, if possible, be removed at once, and bran poultices, either hot or cold, applied, and the animal kept as warm as possible. When due to errors in feeding, the animal should be given a good dose of laxative medicine, from 1 to 2 pints of linseed oil, according to size, and its action aided by enemas of soap and water. If due to over riding or driving, diarrhoea is usually present, and no laxative medicine is required.

The following drench may be given to relieve the pain and reduce fever:

Spirits ether nit., ½ oz.

Liquor ammonia acetate, ½ oz.

Tincture belladonna, from ½ to 1½ oz., according to size.

Water, 1 pint.

and may be repeated in four hours if required.

The diet should consist of hay, bran mashes, and green food if procurable; no grains must be allowed during the attack. Once the acute inflammatory symptoms have subsided, the animal should be shod as soon as possible with shoes thickened at the heels and the length of the heels increased as much as possible. He should also be given gentle exercise.

WOUNDS OF THE HOOF.—The above may be regarded as indicating all injuries caused by an animal treading on foreign bodies, which thus penetrate the soft structures of the foot. Such bodies include nails, wire, and pieces of iron or glass. The horny sole is sufficient protection, and such foreign bodies almost invariably enter through the frog, injuring the sensitive under structures of that organ, and in exceptional cases may injure the pedal or navicular bones.

Treatment.—The objects aimed at are to prevent infection, and to limit the spread of inflammation. The foreign body must be located and removed, and precautions taken against any particles being left behind, after which the wound must be well washed out with some antiseptic solution. If a nail has caused the injury, the track should be cut out until the injured soft structures are exposed, after which the wound must be thoroughly washed out with some antiseptic, such as Jeyes' or lysol, and then packed with either of the dressings recommended for the treatment of suppurating corn, and then bandaged. The wound must be dressed and bandaged daily until healing occurs. When the animal is fit for work, the sole should be smeared with tar, packed with tow, and a leather sole put on with the first shoeing to prevent any future injury to the old wound, which will then be only covered with a thin layer of horn.

A. C. RUBY, Portland, Ore. C. W. BOWERS, Sacramento.

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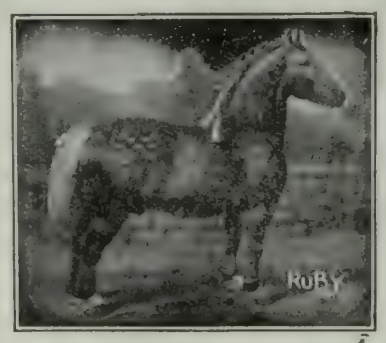

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Am sold out of yearling Shropshires, but can furnish fine Shropshire Ram Lambs sired by Rams imported from England.

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Shire Horses

At the State Fair just closed, every first prize in the Shire classes was won by horses imported by the Salvador Stock Farm.

Stallions and mares for sale at reasonable prices.

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Hopland Herd Shorthorn Cattle

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Eight Yearling Bulls, Grandsons of the famous sire King Edward—six dark red and two roan.

Also three registered yearling Holstein Bulls, exceptionally good values. Write for prices.

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HEREFORD BULLS

100 Hereford Bull Calves 100

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Single or in Carload Lots

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With the Livestock Men.

In a communication to this office, C. M. Winslow, secretary of the Ayrshire Breeders' Association, states that Ayrshire Day at the National Dairy Show will be October 27, and that it is expected that the breed will make an exceptionally strong showing this year.

A company known as the Pacific Land & Cattle Co. is preparing 10,000 acres of land, across the Mexican line from Calexico, where it expects to fatten several thousand head of beef cattle next year. Alfalfa will be the main crop, with some acreage in cotton, the latter to furnish cotton seed for finishing.

The Onstott Estate, near Gridley, has remodeled its dairy barns and is milking 90 head of cows. Another dairy will be established on the river ranch in the future.

The management of the National Dairy Show, to be held at Chicago October 23 to November 1, 1913, has designated Thursday, October 30, as Holstein Day, and has prepared a program for that day which calls for special consideration of the Blacks-and-Whites and their interests.

After a 10-day trip into the Modesto and Turlock districts of Stanislaus county, C. J. Heisey, manager of the Churchill Creamery at Fallon, Nevada, returned home during the week with 230 head of excellent dairy cows. The Fallon Project is peculiarly adapted to dairying and with good grade foundations like these will soon be one of the leading livestock districts in Nevada.

The Visalia Co-operative Creamery broke all past records in disbursements during the week when nearly $26,000 was paid out for butter-fat received during September. Prices were good, being 41 cents for sour cream and 42 cents for sweet. The total amount paid out to Tulare dairymen for the same period was $88,107.02.

A shipment of draft horses consisting of 20 head ranging in weight from 1200 to 1800 pounds was sent to San Francisco from Stanislaus county last wek. Prices ranged from $100 to $250 each.

Plans for the entertainment of delegates to the California Dairy Association meeting to be held at Tulare November 6 to 8 are well under way. A large delegation is expected, as this is the big event for dairymen each year who are interested in the advancement of the industry.

The Paicines Ranch Co. sold 20 head of Durham bulls last week to Henry W. Lynch to be shipped to Pleyto, and 20 head to Frank Silliman, of Watsonville, who also purchased the three-year-old Shire stallion that was shown at the State Fair in 1912.

Fifty thousand sheep will be dipped at Marcuse Station, in Sutter county, this fall. Among the tanks there are in charge of Peterson and Campbell a State inspector seeing that the work is properly done.

Several trainloads of cattle have been shipped from Mendocino county into the lower sections. Among those who have made recent shipments was Jim Dunn, whose stock went to Solano county.

An auction sale of dairy cows, held in Tulare county last week, brought an average of $55.35.

The beef situation at the Portland Stock Yards for the past week has been very favorable. Prices are 5 and 10 cents higher, prime steers ranging from $7.75 to $8; cows, $6.50 to $6.75; range steers, $7.50 to $7.75; and bulls, $5 to $5.50. Swine also advanced, light hogs going at $8.25 to $8.65, and heavyweights at $7.25 to $8. The sheep market was stronger, with ewes at $3.90 top, extra choice lambs $5.50, average good grade lambs steady at $5 to $5.25.

Nearly $145,000 was paid to dairymen in Kings county, during the past week, by creameries operating in that section. The prices paid for September were about 5 cents higher than those of August.

Sam Rhoads, of French Camp, has, according to a report, put up 104 tons of ensilage from 6¼ acres of corn. This is a very good yield and demonstrates that the silo is practical, from a corn-growing standpoint, in California.

A land and cattle show is being held at Sisson, Siskiyou county, this week. Lectures and demonstrations on all lines are to be taken up.

CREAMERY AND DAIRY MEN'S PROGRAM.

The California Creamery Operators and State Dairymen's Associations will hold their annual conventions jointly at Tulare, November 6, 7, and 8. The opening day papers will be read by J. P. Murphy, president of the Creamery Operators' Association; A. J. Pillsbury, on "Liability and Compensation Insurance;" F. W. Andreason, on "Works of State Dairy Bureau;" address by Helmer Rabild; C. L. Mitchell, on "Future of Co-operation;" S. H. Greene, on "The Creamery Managers' Association."

Friday, J. W. Guiberson will deliver an address on "The State Dairy Association;" Prof. C. M. Haring on "How the College of Agriculture Can Help the Dairymen in Dealing with Bovine Tuberculosis;" S. O. Walker, "The Need of Uniformity in Dairy Laws;" S. A. Carver, "Dairy Legislation;" Dr. Wm. F. Snow, "Why I Opposed the Dairy Bills;" Guy H. Miller, "Practical Breeding for Production;" W. S. Guilford, "Business Efficiency in the Dairy;" A. Jensen, on "Grading Cream;" W. H. Roussel, "Marketing Dairy Products;" Prof. S. M. Davis, "The University Farm."

Saturday will be devoted to election of officers, business session, and butter-scoring contest.

SHROPSHIRES

Pure Bred and Registered

140 Head Yearling Rams
150 Head Ram Lambs

Enterprise Stock Farm

H. P. EAKLE, Jr. Woodland, Cal.

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

EXCEPTIONAL OPPORTUNITY TO BUY A FOUNDATION HERD OF
Pure Bred Jersey Cattle and Berkshire Hogs

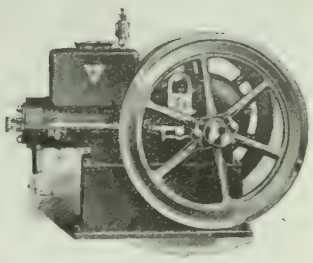
Owing to other business, I will sell at once my herd of 16 Jerseys, partly registered, including 18 month old bull Gerties Woodland Son 106120, sired by the famous bull Gerties Son, and whose dam was Lady's Setty Victor. Also my herd of Berkshires, including 3 boars, 3 brood sows due to farrow soon, and 2 gilts. This herd produced the boar, Brinton's Longfellow Junior, champion boar at Sacramento, 1912; also got first for best boar under two years at State Fair, 1913.

Do not miss this opportunity of buying your foundation herd at reasonable prices.

Call at my ranch near town or write.

A. H. BRINTON, WOODLAND, CAL.

Two New De Laval Products



Alpha Engines

Why not buy an up-to-date engine that has done away with all of the objectionable features that are so common in most gasoline engines. All **Alpha engines** have the new geared-in magneto and require no cranking. Let us tell you more about this engine.

Ideal Green Feed Silos

are sweeping the field. Dairymen of the Pacific Coast States are coming to realize the advantages of the silo and to appreciate just how much better the **Ideal Green Feed Silo** is than any other make.

Material used in the manufacture of these silos is best grade Redwood, selected tank stock. **Ideal Green Feed Silos** are air-tight, which keeps the ensilage from spoiling and will last a lifetime.

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1016 Western Ave. SEATTLE

"Everything for the Dairy & Creamery"

HOLSTEIN-FRIESIAN BULLS

BRED FOR YEARLY PRODUCTION

Aralia De Kol.

Two of our herd bulls are from 28,000-lb. dams with butter records of 1085 and 1142 lbs. We have fifty cows on yearly test. The first eight junior 2-year-old heifers to finish average 471 lbs. fat (588 lbs. butter, 80% basis). Ten cows have finished, including two 3-year-olds and three 4-year-olds, with an average over 700 lbs. fat (875 lbs. butter). Fifteen cows have averaged 651 lbs. fat (813 lbs. butter). Estimate the value of a bull in your herd backed by such production. Place your order now, as they are going fast. Write for information and prices.

A. W. MORRIS & SONS, Woodland, Cal.

1st Prize Ram Lamb, Omaha, 1911

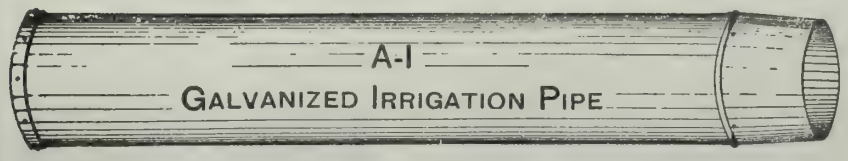
San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

FIRST PREMIUM, CALIFORNIA STATE FAIR, 1913



WHY does our **A-I Surface Irrigation Pipe** stand the hard usage to which it is subjected better than any other pipe, riveted or otherwise?

BECAUSE it is made with a lockseam set down under 3500 pound pressure, which requires no soldering to make it water tight (solder will break loose by jarring and hard knocks).

A-I Pipe was awarded first prize at Fresno and Santa Clara County Fairs in 1912.

Send for new catalog with prices and valuable information.

AMES-IRVIN CO., 8th and Irwin St., San Francisco.

IT PAYS TO USE A GOOD RAM.

Howard Hackedorn of the Missouri Experiment Station started out to show by actual test the difference in profits derived from grade ewes bred to an average medium priced mutton type ram as compared with the profits from the same class of ewes when bred to an inferior ram. He used such a ram on one lot of common ewes and a scrub ram on another lot of the same kind. These are his conclusions:

1. The average total gain of the lambs sired by the better ram was 2.54 lbs. more at 3 months (93.61 days) of age than the average total gain of the lambs sired by the inferior ram at 4 months (122.5 days) of age.

2. The average daily gain of the better lambs was 26.6 per cent greater than that of the lot of lambs sired by the inferior ram.

3. The feed eaten by the lot of lambs sired by the inferior ram was 59 per cent more than that eaten by the lambs sired by the superior ram. The grain eaten per 100 lbs. gain was 88.78 lbs. for the former lot and only 52.81 lbs. for the latter.

4. Both lots of lambs consumed about the same amount of grain at the same ages, the advantage being slightly in favor of the lambs of the better mutton type.

5. At 3 months of age, the lambs sired by the ram of mutton type were 9.39 lbs. heavier and made a total gain of 8.43 lbs. greater than the lambs sired by the inferior ram. The lambs from the scrub sire required 2.8 per cent more grain per 100 lbs. gain than did the other lot.

6. The average daily rations for the two lots of ewes were about the same.

7. Lambs sired by the good ram sold for $7.35 per 100 lbs., while those sired by inferior ram brought only $4.50 per 100 lbs.

8. The lambs were thicker fleshed, smoother, broader in back and lighter in the pelts.

A good strong yearling ram should be able to serve fifty ewes. A good ram when used on a flock of grade ewes is in many cases more than half the flock because he will usually have greater ability to stamp his character on the offspring than will the ewes. So with a small flock of grade ewes, worth from $4.00 to $10.00 per head, one can afford to purchase a good mutton ram. As the value of the ewe flock increases, one can afford a high-class ram. It is economy to have a ram of superior character at the head of the flock.

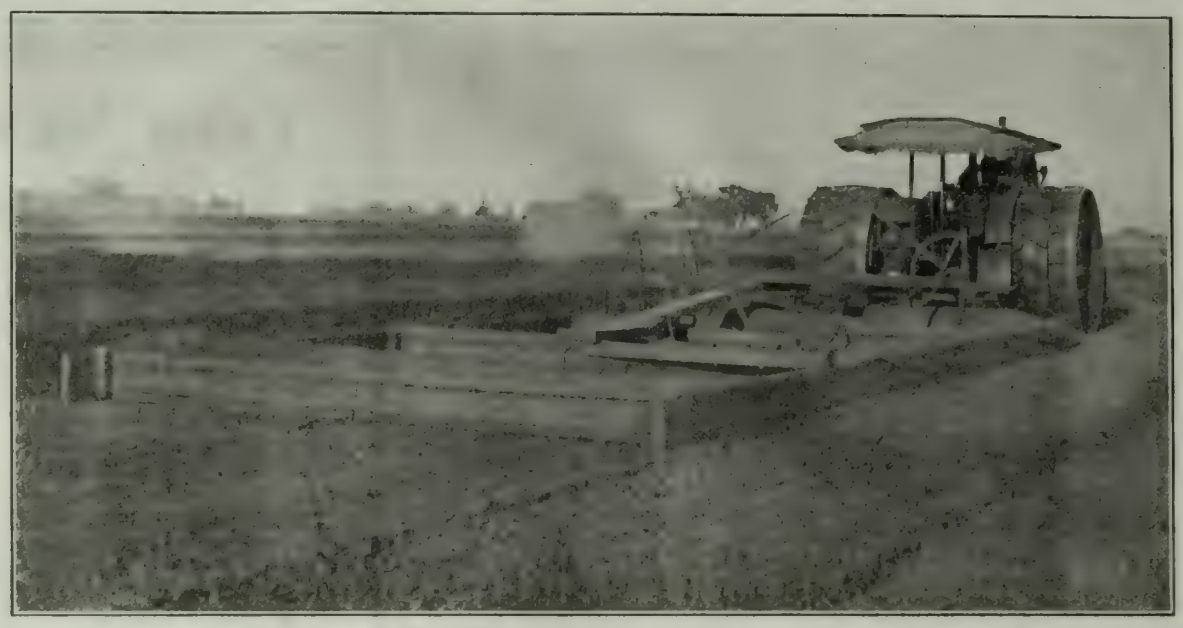
A BOOST FOR THE OLD PIPE.

Tobacco is extremely efficacious in the killing of microbes, according to Messrs. Langlais and Sartory, of Paris, France, who state their experiments have shown that in five minutes tobacco smoke will kill almost all the microbes in the saliva, thus nearly completely sterilizing the mouth. One of the experiments carried out by MM. Langlais and Sartory was to place several cigars in water containing many millions of cholera microbes to the square inch. The tobacco sterilized and destroyed the microbes in twenty-four hours.

[Of course, the investigation should go further and demonstrate whether all microbes were killed or only the bad ones. If a man had all the microbes in him killed, he might as well be taken at once to the crematory!—EDITOR.]

All raisers of pure bred hogs should attend the meeting of the Swine Breeders' Association which is to be held at Davis, November 7.

The Attraction of the Farming World



The Schmeiser Land Checker and Leveler

Levels the land and leaves it perfectly smooth. Makes perfectly uniform, straight checks. Does the work better and quicker than any other implement or method, and

SAVES TWO-THIRDS (2/3) THE COST

Machines are operating near Davis. Write us, giving your 'phone number, and we will advise when and where they can be seen. See it for yourself.

Schmeiser Manufacturing Company, Davis, California

Irrigators

Who are Interested in Lifting Water from Deep Wells Should WRITE for This BOOK

Catalogue No. 54 P

Pomona Pumps for Deep Well Pumping

Pomona Manufacturing Co.
Pomona, California

When writing state the depth of your well, etc., and be sure to ask for "Catalogue No. 54P." Address: Pomona Mfg. Co., Pomona, Cal.

NO PIT

is required with the

Krogh Deep Well Turbine Pumps

You bore a hole and insert the pump in same, no matter what depth to water. Pumps are automatically water balanced and are self-aligning.

More water can be obtained from a bored or drilled well than with any other type of pump.

Write for Bulletin

Krogh Manufacturing Company

SAN FRANCISCO, CAL.

Branch at

LOS ANGELES, CAL.

ARMSTRONG DISTILLATE ENGINES ARE FURNISHED WITH MAGNETO & GUARANTEED 5 YRS.

1½ 2 4 6 8 10 15 20 HP SIZES

AN ENGINE OR PUMP SHOULD BE BOUGHT JUST THE SAME AS A HORSE OR COW THE POOR ONES COST LESS DO LESS - DIE SOONER - BUY WITH YOUR EYES OPEN WRITE FOR OUR HANDSOME CATALOG - DON'T WAIT UNTIL YOUR CROP IS DEAD.

MILLER PUMPS ARE UNEQUALED

PUMPS FOR ALL HEADS AND DUTY.

A PUMP OR ENGINE BOUGHT OF US IS GUARANTEED

NORMAN B. MILLER CO. SAN FRANCISCO
503 MARKET STREET

REDWOOD TANKS

I sell to the consumer. Box shook and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon tanks, Spraying tanks. Independent.

R. F. WILSON, Stockton, California.

The Riverside County Fair and Poultry Show.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Riverside held its first county fair and poultry show combined on October 6 to 11. To say that it was a success from start to finish is to put it very mildly. The display of produce grown in the surrounding country was something no other State could boast of. While the quality of some things might be equaled in other States, the variety of good things grown to perfection on California soil gives her a monopoly. If variety is the spice of life, then surely Californians ought to have the life abundant. Instead of corn, alfalfa was king, and the various booths, made chiefly of alfalfa, reminded one of a cool nook in a haystack. Cotton, dates, walnuts, olives, prunes, oranges, lemons, and many other fruits, too numerous to mention, were there in abundance, besides all kinds of vegetables, mineral waters, etc., and as evidence that alfalfa was king, a large loaf of bread made from alfalfa was on exhibition at one of the booths, but though I was very anxious to try that loaf of bread, the man in charge would not disobey orders. It appeared he was instructed to cut and distribute that loaf of bread on Saturday, and as I came home on Friday I missed the bread.

WOMAN'S WORK.—If the agricultural products were of extra quality and variety, we can truthfully say the same of the woman's department. All classes of food products, such as canned fruits, jellies, bread, cakes, and everything within the culinary art was of the highest, and the judges had a hard time placing the awards. In the department of needlework of all kinds, competition was keen. We are too much inclined these days to think women have forgotten many of the old arts, such as knitting and quilt making, but a visit to Riverside County Fair would dispel any such illusion. Being a good knitter myself, I got a litle protuberance that children call swell head, and fancied all I had to do was just walk home with the premiums. So I made a few entries in the woman's department —that is, in the knitting class—but the lump on my head is not nearly so swelled since the visit to Riverside. Talk of competition! Why I never supposed there were so many women interested in knitting. My knitted spread was really a back number, and I thought it was the best ever; but there were six others, and between ourselves the judges must have just had to guess, for it would have taken the wise men of the East to tell which was best. In Irish crochet it was the same way—so many good pieces that it puzzled anyone to tell which was better than the last one. The women of southern California certainly did themselves proud at this county fair, and it was decided to make it an annual affair.

LIVESTOCK.—The livestock exhibit was a good one, not so much so in numbers as in quality. In horses there were some good Shires and one or two good Percherons and some excellent roadsters. Holstein cattle led in numbers, but there were a few fine Short-horns, with very good Durham markings and shape. The horses and cattle were led twice around the race track, so that one had ample time to notice the good points of each animal. Of course, the hogs did not parade, but there were some fine Berkshires and Poland-Chinas in pens.

THE POULTRY SHOW.—One of the judges remarked that the Riverside poultry show would compare very favorably with the State Fair at Sacramento, and as he was there we took his word for it. Indeed it is hard to tell where there has been a better show, considering the time of year. Most fowls are in the molt and none appeared at their best, but the quality was good.

All the old breeds were well represented and some of the newer ones. White Rocks were really grand in quality; it is rare to see such fine birds as were exhibited at this show. There were some good Barred Rocks, too; Patridge Rocks were also good; but there were no Buff Rocks. There was a good turn out of the Orpingtons, both Buff and White, which shows that they still lead in popularity. There were three varieties of Leghorns, the Black, Brown, and White, with the White leading in numbers, and I might also say in quality, for it is not often one sees so many good White Leghorns as were to be seen at this show. They were exhibited in pens, in yards, and single, and some even came in their working clothes without dress suits or grooming, just to show how they could work these fall days. I visited one of the prominent poultry ranches of Riverside, and was taken around and shown just how they raised poultry there and what is being done, but this will have to be a separate story, for it is quite a long one.

In pigeons there were such a variety and so many of them that it really looked as if every boy in the country ought to have a pair, and while I am no judge of these little pets, I am sure there were some of the best that I have ever seen at any show.

THE INDIAN PARADE.—To me, the most interesting feature of the fair was the Indian children from the Sherman School. Surely the money being spent in training and educating these children is well spent. Anything that makes for character and training a child so that it can make its own living in the world is well done, and the work of training these Indian boys and girls is certainly being well done. On Friday these school children paraded around the racetrack twice, giving examples of the work they are being taught, and it was really inspiring to see how advanced they are in all the crafts. Such exhibits as these make one proud to be an American citizen; the pity is that our schooling, or educational system, has not done the same for our own race. How much better it would be if every child were taught some useful occupation along with his mental work! Head and hands should work together, and our educators are beginning to see it now, so we shall have better equipped boys and girls in the near future. At the Sherman school the girls are taught housework, laundry work, cooking, baking, dressmaking, lace making, nursing, and indeed everything useful, and all these trades were demonstrated on gaily decorated floats in the parade.

The boys had charge of the stock belonging to the school farm, and had floats representing the printing trade; in fact, they printed circulars and threw them broadcast en route in the parade. There were also blacksmiths, engineers, gardeners, bakers and tailors. Agriculture in all its phases seemed to be the leading occupation. The boys had some pretty good horses and extra good cattle, and they knew how to handle them. What was meant to represent the old time when our soldier boys had to go out against the Indians was a little band of warriors painted ready for the warpath. These braves led the parade, and as the day was very warm, it certainly looked like a case of cruelty to animals, if not men, for the paint ran in streaks down their faces while they marched like stoics of old. On the laundry wagon an old-time squaw and her method of washing with her hands was the comparison. One float had an imitation tepee with a half dozen little children dressed in blankets, while the next one represented Uncle Sam and the little red schoolhouse up to the eighth grade; the Goddess of Liberty stood at the rear and a figure of Uncle Sam faced her. It does one good to see the advance being made with the red man, if only we could keep the money at home that is sent to far-away foreign missions and train the waifs in the cities in the same way, what a grand thing it would be; but so many people think only of giving to those who are not ready to receive. It is a case of casting pearls before swine, for until barbarous races are ready for civilization it is no use to bother with the individual.

THE TEXAS TURKEY TROT.

One of the most unique celebrations in Texas was the turkey trot held in the city of Cuero, county seat of Dewitt county, in southwest Texas. Twenty thousand turkeys, varying in size from five to thirty pounds, marched through the streets of the city. The turkey column extended more than three blocks, the 100-foot streets being filled completely from building line to building line. Governor Colquith of Texas led the parade and several bands played 'turkey trot' music, the strains of which seemed to inspire many of the birds to strut along with majestic stride as though recognizing that the eyes of the world were on them. In the forefront of the column several majestic peacocks vied with a number of imposing toms in the performance of turkey trots, giving additional color to the event and arousing much enthusiasm, their hoarse and discordant calls mingled with the "gobble, gobble" of the turkeys, at times almost drowning the music of the bands.

The turkey trot was held in recognition of the tremendous growth of the turkey and poultry-raising industry in southwest Texas during the last few years. This is the natural home of the turkey, and formerly many thousands of them grew wild in the bottom lands, but with the increase of civilization the wild birds have been driven to remote portions of the State. The great coastal plains of Texas, where green food may be raised every month in the year, where the turkeys and chickens may live in the open all the time, and where there are large ranges especially suitable for raising them. During the last few weeks Dewitt county has shipped out hundreds of carloads of turkeys; during the winter months they are sent out by the trainload, and the people of that and adjacent counties may well be proud of the industry.

THE LONESOME HEN.

To the Editor: I have a new, easy and humane way of breaking up a broody hen that may interest those of your readers who are raising the broody breeds. As soon as I find a hen on the nest at night time, I gently remove her and place her in another yard just before it gets too dark for her to find the roosting place. So far I have not had one that would continue to sit in a strange yard, although the house, or houses, have the usual complement of laying nests. The hens seem to forget that they want to set when placed in another yard, and when tired of trying to get back to the old yard go to roost with those already on the perches, and do not go on the nest the next day. In a few days they will begin to lay again, as they get all they require in the way of food and water.

San Jose. SAM'L HAIGH.

DEATH TO ROOSTERS.

A dispatch from Columbus, Ohio says: Relief to the weary in their early morning slumbers is assured in the State of Ohio. An early day in June, 1914, is the date fixed by the State Dairy and Food Department, when their rest will cease to be disturbed by the crowing of roosters, as it is decreed that then all surplus roosters in Ohio will go to their death. Before then a proclamation will be issued urging the slaughter of every crowing cock in the State, except a few prize roosters for the benefit of eggs for hatching.

Eggs are put on the free list in California. How much or how little that will affect the poultry industry will have to be tested by time. I don't think we need be afraid, for our people are not going to eat stale eggs even at a gift.

The Oregon Agricultural College owns a hen, "C-543," that has broken the world's record with 283 eggs in a year. She was hatched April 29, 1912, and began laying at the age of 5½ months.

The Stanislaus County Poultry and Pet Stock Association is making good progress in working for the show to be held from November 12 to 15 at Modesto.

POULTRY.

WHITE PLYMOUTH ROCK COCKERELS —Good birds. $3.50 each. H. S. Kirk, P. O. Box 597, Sacramento, Cal.

ORPINGTONS, BUFF AND WHITE—Summer sale of stock. Mrs. S. Swaysgood, Route 2, Pomona, Cal.

FOR SELECTED EGGS AND CHICKS from S. C. White Leghorns, see Hopland Stock Farm advertisement.

CROLEY'S PIONEER EGG MAKER—Makes poultry pay when egg prices are low.

CHICKENS, DUCKS GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

BRONZE Turkeys and Eggs at Hart, Clement, Cal. Large size, good plumage, early maturity.

CROLEY'S HIGH GRADED HARD SHELL —The leader in poultry shell.

PENNANT STRAIN BARRED and BUFF PLYMOUTH ROCKS.

A few choice cockerels and pullets left. Eggs for hatching after January 1st.

JAS. M. MONTGOMERY, 4360 Fleming Ave., Oakland, Cal.

A QUICK MOLT

You want a well balanced ration of good strength in protein like

COULSON'S EGG FOOD

to get through the molt quickly and get your share of eggs in the fall.

Write us for free book, "Chickens."

COULSON POULTRY & STOCK FOOD CO., Petaluma, California.

TEN THOUSAND HEAD OF TURKEYS WANTED FOR THANKSGIVING

We want the farmers of California to raise ten thousand head of choice turkeys for our Thanksgiving trade. Last year we sold fancy dressed turkeys as high as 30 cents a pound. Commence now to get your turkeys ready for the Thanksgiving market. Have them as large and fat as possible. Write us immediately how many head you will have ready for sale at this time, as we want to keep in touch with you from now on until after Thanksgiving and Christmas. Send us the names of all of your neighbors who have turkeys and about how many head each one has on hand, and we will certainly make it to your object to do so. Mark and consign all produce you have on hand to us at San Francisco

W. C. PRICE & CO., General Produce Commission Merchants, 211-217 Clay st.

The Home Circle.

Make the Farm Life Attractive.

By one of our noted educators the statement was made recently that the value of every grown child to a community was estimated to be $1000 in European countries. If this estimate of value is correct the most valuable asset to the farm or a rural community is its young people. How to keep them from drifting to the city is one of the great problems.

* * *

Today in California there is organized to help, a great force for the upbuilding of rural life. All that is necessary for better conditions for living on the farm is for farmers themselves to act. The great agricultural college and government experiment stations stand ready to supply information upon practically every subject that interests those of the rural communities.

* * *

Perhaps one of the easiest and most practical reforms the women may accomplish with their votes would be in connection with the country schools. Why not make the school the social as well as the educational center of its district? Let the teacher be the leader in scientific farming as well as the common school education.

* * *

To our mind the teacher should organize a class of adults, men and women, and a session of two hours be held at least one evening each week during the school term. The teacher can easily acquire a working library on matters agricultural, besides having the knowledge at hand as to where questions may be answered and difficulties settled.

* * *

Besides purely farming matters, the teacher should help in organizing the women into some club that has for its object the betterment of conditions in the homes and of the community. How to keep down flies, prevent contagious diseases, stop mosquito breeding, provide for better sanitary conditions in every way. Help in beautifying home grounds, also in cleaning the roadsides, see that the street work is done and that the road money apportioned to the neighborhood is properly expended.

* * *

A teacher that could and would act intelligently in such matters would be a real asset to the community and should receive a larger compensation. Such a teacher should make a study of the needs of the community, and the school officers should make a contract for the coming year before the present term is ended that during vacation the teacher could spend the time in reading up and investigating the problems for the benefit of the district.

* * *

"The child who has been made familiar with the characteristics of animals, birds, flowers, and trees, and can name them at sight, finds that the great earth is teeming with interesting neighbors of man, whose acquaintance is an ever present joy. He walks thereafter in a more beautiful, broad, and inviting land than that traveled by his untutored fellows." The techer who can help to such a knowledge is worth many times to the community over the one who knows only what is to be had from text-books.

* * *

An automobile as a means of enjoying a trip to town or take one's best girl joy riding will help to keep the young folks on the farm. But there are other things essential to the growing boys and girls. Running water in the house, good bathing facilities, electric lights, electric irons, electric heaters, vacuum cleaners, patent dish washers, cold air closets, up-to-date house planning and freedom from insect pests all will help. Added to these a knowledge of "why" will make work a joy instead of drudgery, and the farm will become a place of prosperity and contentment.

The Fire Bucket.

Every farmer should be prepared in case of fire. In probably not one out of a thousand American farm houses or barns is a bucket of water kept in a handy place ready for use in case of fire emergency; yet so effective is a handy bucket of water when fire starts that the insurance underwriters grant a lower rate of insurance to manufacturers and merchants who will keep a specified number of filled fire buckets in certain locations in their buildings. Frequently a cupful of water helps.

Every household should be equipped with a fire bucket, provided with a cover, filled with water, and used for no other purpose. The best type of bucket is one with a rounded bottom, which prevents its sitting on the floor, and so makes it useless for ordinary household work. These buckets should be painted red, and should be filled at regular intervals to replace water lost by evaporation. One such bucket at least ought to be provided on every floor of the house or barn. They should be located near the stairs or entrances to the building, so that those rushing in from the outside or starting for the stairs can get them without delay.

The rounded bottom buckets can be kept either in a bench with a hole cut it it to receive the bucket, or else can be suspended out of reach of children, from a metal or wooden bracket.

The cost of such fire protection apparatus on farms is so slight, compared to the loss it may save, that no farmer should neglect this precaution.

At the same time, "no matter how good the fire fighting apparatus on a farm may be, the owner and his employees should not, for that reason, become careless or permit smoking in barns or other dangerous places because they think they have at hand the means to extinguish a fire. All home owners should be particularly careful to keep lamps so far from woodwork, curtains, or other inflammable material that there is no danger of the direct flame of heat setting fire to anything. Open candle flames, or other open flames, are particularly hazardous. Piles of trash or papers or other waste in yards around buildings or left in cellars are especially dangerous.

Sanitary Dish-Washing.

Do you really know how to wash dishes? Of course you do, but Uncle Samuel, via Farmers' Bulletin No. 375, gives us many pointers which are worth considering. In the first place, never ask a bacteriologist (isn't that a name?) if things are clean, because with the aid of a microscope and a dozen or so other instruments he will discover a few million bacteria on everything in your kitchen.

Dishes have been tested to determine the number of organisms that remain on them after "ordinary" washing as compared with a method that requires an application of hot water with the help of soap, or, better still, carbonate of soda, a thorough rinsing in hot water, and wiping with a sterilized cloth (that is one which has been in boiling water since it was used before). By this latter method the dishes were practically sterile, while many organisms were left on the dishes that were washed by the "ordinary" method.

One might ask what harm they will do if present. Oftentimes none, but if the bacteria are those which convey disease, dirty dishes may be the means of giving it to well persons. But most of all persons who are at all thoughtful of such things do not want any dirt which may be prevented by good methods, simply because dirt in itself is sufficiently unpleasant.

In washing milk utensils it is first necessary to remove with warm water all traces of the milk before scalding water is used.

Because of the cream adhering to the sides soap is used, but the greatest care must be taken to remove by repeated rinsing all traces of soap.

A telltale flavor of soap in the morning cream has more than once revealed careless habits in the kitchen, and made it evident that all the soap was not removed in rinsing.

The utensils must then be dipped into absolutely boiling water for a moment.

Canning Cold Eggs

The food research laboratory of the bureau of chemistry, at Washington is conducting experiments in a number of egg-breaking establishments in order to assist the manufacturers in canning perfect eggs for winter use. According to the specialists of the department there is no reason why eggs cannot be broken, canned and kept as an excellent food just the same as other products are canned and kept for use when the fresh supply is low.

As in all canning, however, the specialists have made clear that it is essential that nothing but perfect eggs be canned (and that they be canned under such conditions of cleanliness and kept in such low temperatures that they have no chance to spoil).

Under the new system of canning the

Madam—

When the problem of "what shall we have for dinner" again presents itself—just remember what a zest

Ghirardelli's Ground Chocolate

adds to any meal. It is ready at a moment's notice, it is liked by every member of the family, it is easily digested—it is, on the whole, a perfect home beverage. Yet it is as inexpensive as anything of its kind you can buy. Thirty cups to every pound.

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eggs are canned in rooms and with utensils that rival in cleanliness the appointments of the hospital operating room. Everything is sterilized, and those who actually break the eggs have to clean their hands, much as the surgeon does before operating. Each egg before being broken is candled, and nothing but perfect eggs come into the breaking-room. Each egg is broken separately into a cup. If, by any chance, the egg is other than first class, it is not dumped into the can, but is removed from the breaking-room, and before the breaker can resume work she must clean her hands and sterilize all the instruments she has used. The actual breaking is done with eggs at a low temperature and in a room where the air is cold enough to prevent any change in the nature of the egg. The cans of eggs are then sealed and frozen, and kept frozen until they go to the baker at the time of egg shortage. Through these means the specialists are confident that good eggs can be canned at the time when eggs are plentiful, and thus provide an ample supply of reasonably priced eggs for bakers when eggs mount up in price. Eggs canned under these conditions are in no sense to be confused with the carelessly canned or doctored eggs put out by unscrupulous egg-breakers and used by unscrupulous bakers as a cheapener for their cakes and other products.

Parentitis is a disease name not found in books. The thing it describes is in every family where a parent and grown-up children live together. It comes from the survival of the parental instinct long after there is any use for it, and from the inflammation caused by its unwelcome exercise. Children get weaned from their parents. It is advisable for their fathers and mothers to get weaned from them. The incessant and ubiquitous watchfulness over a generation old enough to take care of itself is unwise, ineffective, and harmful. It pulls up roots that must be let alone, if they are to take root. It strains the will to obey the fifth commandment to the breaking-point. It forces deception or concealment on any self-respecting youth. It is sure to end in sorrow and bitterness. Every parent ought to be able to alter the words of the apostle, and say of his children, When they were children, I thought of them as children; but, when they became men and women, I put away childish thoughts.

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NAME AND ADDRESS

Some Irish-isms.

His lordship, Ripon, in a sermon at Calverley, near Leeds, betrayed his Hibernian origin. He said: "My bretheren, I beg of you to take hold of your own heart and look it straight in the face."—Westminister Gazette.

Pat—Mrs. Flannigan, yure mon Moike has just fell off th' scaffoldin' and killed himself, bedad.

Mrs. Flannigan (collasping in chair)—Hivins!

Pat—Aisy—aisy! 'Tis only his leg that's bruk. It's rejoiced ye'll be to hear it whin ye thought he was killed fur-s-t.—Puck.

Armed with guns and huge game bags, the two Irishmen sallied forth in search of sport. It was their first venture at shooting and they were dreadfully keen.

Suddenly Casey spotted a bird, and, taking careful aim, prepared to fire the fatal shot. Then Pat seized him by the arm frantically.

"For mercy's sake, don't fire, Casey!" he yelled. "Sure, an' ye've forgotten to load yer gun!"

"That's as may be, my lad," retorted Casey, "but fire I must. Begorrah, the bird won't wait."—Answers.

Logical.

Mabel's auntie was expected on a visit. Just as she was almost due to arrive a telegram came which read:

"Missed train. Will start at same time tomorrow."

Mabel hurried home from school expecting to greet her aunt; instead of doing so, however, she was shown the telegram. She read it through carefully and laboriously, and then remarked:

"How silly of auntie, mamma."

"Why, dear?" inquired her mother.

"Well, don't you see that if she starts tomorrow at the same time she'll lose her train again?"—Pearson's Weekly.

Rare Cleverness.

"Why won't you buy something at my table?" demanded the girl at the charity fair.

"Because I only buy from the homely girls," said the man. "They have a harder time making sales."

The girl was not offended, and he worked this right down the line.—Louisville Courier-Journal.

Little boy (pointing to window of rubber store): "What's them?" Mamma: "Those are diving suits, made all of rubber, so the diver won't get wet." Little boy: "I wish I had one." Mamma: "Why, what for, my dear?" Little boy: "To wear when you wash me."

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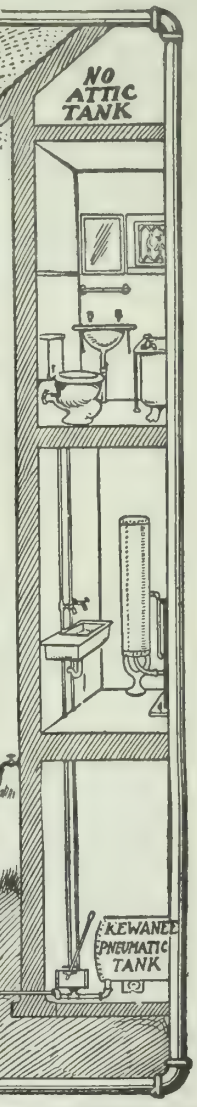

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Not a Steady Drinker.

A doctor's patient in Excelsior Springs the other day was answering the usual list of queries prior to entering upon a course of treatment.

"Are you a steady or periodical drinker?" asked the physician.

"Periodical," was the reply.

"How long between periods?"

The poor fellow studied a moment, that he might answer correctly, and replied:

"About twenty minutes."—Ex.

Thou hast too much to say about thy rights, and thinkest too little about hy duties. Thou hast but one inalienable right, and that is the sublime one of doing thy duty at all times, under all circumstances, and in all places.—Frederic R. Marvin.

It was a colored woman of New Jersey who once invoked "the peace that passeth all misunderstanding." That is a prayer in which we can all join.

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94 Madison Ave., Atlanta, Ga.

THE MARKETS.

San Francisco, October 21, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

There has been some fluctuation in Eastern wheat markets this week and this grain is now a little weaker there than it was a week ago. The Eastern situation has had no effect here, where everything remains as before. Receipts from the North have come in with fair regularity.

California Club, ctl	$1.47½@1.50
Forty-fold	1.47½@1.50
Northern Club	1.47½@1.50
Northern Bluestem	1.65 @1.67½
Northern Red	1.55 @1.70

BARLEY.

With the speculative market showing but little life, the market for spot barley has been firming up all week. This is especially true for the better grades, which are quoted a little higher and reported firm at the advance.

Brewing and Shipping	$1.42½@1.47½
Choice Feed, per ctl	1.37½@1.40
Common Feed	1.30 @1.35

OATS.

The holding off of the rains continues to have an adverse effect on the demand for seed grain, and the market is off for both white and black. The steady though not very active demand for red oats for feed has held that line up to last week's quotations.

Red Feed	$1.65 @1.85
Seed	2.25 @2.30
Gray	Nominal
White	1.45 @1.50
Black Seed	2.50 @3.00

CORN.

There is hardly enough doing in corn to establish a market, the situation being practically the same as for some time past.

California Yellow	Nominal
Eastern Yellow	$1.95 @2.00
Eastern White	Nominal

RYE.

There will be little demand for recleaned rye until rain causes an inquiry for rye for seeding purposes. There is no appreciable change.

Rye, per ctl	$1.45 @1.50
Seed	1.65 @1.70

BEANS.

The bean market has continued firm this week with further advances in some lines. Those advanced a week ago have remained firm at the new figures. Receipts have been fairly large; but, as indicated by the advancing market, there seems to be no apprehension of an oversupply. Some limited arrivals are reported from Washington. The shipping orders have been a little higher this week than had been expected, but are expected to revive shortly.

(On wharf.)

Bayos, per ctl	$3.50 @3.70
Blackeyes	3.80 @4.00
Cranberry Beans	3.75 @4.00
Horse Beans	1.90 @2.10
Small Whites	5.00 @5.25
Large Whites	3.10 @3.25
Limas	4.75 @4.85
Pea	Nominal
Pink	2.65 @2.75
Red Kidneys	3.50 @3.75
Mexican Red	3.60 @3.90

SEEDS.

Considering the absence of demand, the seed market continues firm in most lines, though the absence of rain may cause a weakening in some lines before long.

Alfalfa	12½@15 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	7 @ 7½c
Hemp	3 c
Millet	2½@ 2¾c
Timothy	Nominal
Yellow Mustard	Nominal

FLOUR.

The flour receipts are now chiefly from Oregon and Washington, with an occasional small shipment from Kansas. The local market moves along from day to day without change.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.65 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Arrivals of alfalfa hay keep up well and have been sufficient to offset the dropping off in other lines. Some grain hay is also coming to San Francisco from the river districts. Some hay is being taken from local warehouses to supply immediate needs, but the general policy is to do nothing until the fall weather declares itself. Most grain hay is now off the fields, and the fifth crop of alfalfa is being cured. Alfalfa promises to be plentiful, though the demand is not good and comparatively little is being sold at present. Some inquiry is reported for fancy wheat hay in light bales and for fancy red oat hay.

No. 1 Wheat, or Wheat and Oat	$15.50@16.50
do No. 2	14.00@15.50
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 80c

FEEDSTUFFS.

Receipts of bran seem to have slightly overbalanced the demand, and the market has become easy with a slight drop in quotations. Shorts are also rather weak, though still held at the old figures. Alfalfa meal is off 50c per ton. Next week will probably show other slight declines.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	24.00@25.50
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	29.50@30.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Rolled Oats	33.00@34.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Sunday's hot weather told on the arrivals in the early part of the week, and more or less damaged receipts, together with the holdover stuff from the week before, tended to force down prices for off grades and to boost fancy lots. Later arrivals were better, however, and tended to restore normal conditions, as did also the unusual demands due to the Portola crowds. Tomato arrivals have been light and of poor quality. The first car of California celery went East from Antioch this week. Some changes in values are to be noted this week, most of these being of the downward order.

Onions: New Yellow, River, ctl	$ 1.25@ 1.45
Garlic, per lb	6@ 10c
Cucumbers, per box	60c@ 1.00
Green Peppers, box	20@ 50c
Carrots, per sack	60@ 70c
Green Peas, lb	6@ 8c
String Beans, lb	4@ 7c
Summer Squash, lug box	75c@ 1.25
Green Corn, choice, sack	1.00@ 1.75
Okra, box	30@ 65c
Tomatoes, box	25c@ 1.00
Eggplant, box	50@ 95c
Lima Beans, lb	5@ 7c
Sprouts, lb	3½@ 5c
Celery, doz	30@ 40c
Rhubarb, box	70c@ 1.25

POTATOES.

There has been something of a reaction in sweets, and these are now quoted at a drop. Other potatoes are firm and show some advances. Shipments are being brought in from Oregon, and it is claimed that San Francisco dealers have already bought about 100 carloads in Nevada at prices ranging from $18 to $20 per ton. It is said that upward of 1000 carloads are available in Nevada.

Salinas, ctl	$ 1.85@ 2.00
New River Whites	85c@ 1.10
Sweet Potatoes, per ctl	1.00@ 1.40
Oregon Burbanks	1.25@ 1.30

Dairy Produce.

POULTRY.

The Portola celebration has been quite a feature of the trade this week, and prices have been marked up considerably for the best stock, lower grades showing but little change. Arrivals from California points have been larger than usual, and those from the East fully up to the average; but the extra demand has more than made up for the heavy receipts. Quite a shipment of dressed turkeys came in early in the week, but these were rapidly absorbed at advancing prices. With the celebration over, a reaction is naturally anticipated.

Large Broilers, per lb	22 @23 c
Small Broilers, per lb	24 @25 c
Fryers, per lb	22 @23 c
Hens, extra, per lb	18 @19 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	12 c
Young Roosters, per lb	22 @24 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz	4.50@ 8.00
Turkeys, live, per lb	24 @27 c
do dressed	27 @33 c

BUTTER.

Butter in the extra grade has been hovering about the 31½c mark all week, and is now at 31c, the lowest figure in some time, but is firm at that point. The other items are steady at the old figures.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32	31½	31½	31	31½	31
Prime Firsts	30	30	30	30	30	30
Firsts	29	29	29	29	29	29

EGGS.

Eggs went up as high as 55c for extras and 49c for selected pullets early in the week, but have since fallen almost to the old figures, with a prospect of going lower before the week is out. There will be no meeting of the Exchange on Friday, and the day will be more or less generally observed as a holiday, and this is expected to lead to an effort to clean up even at lower prices.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	49	49	50	55	55	50
Selected Pullets	42	44½	45	49	49	46

CHEESE.

Cheese is up again this week, with no great quantity offering. Some California Flats, graded as firsts, have sold at 15 cents.

Fancy California Flats, per lb	17½c
New Young Americas, fancy	17 c
Monterey or Jack Cheese	17 @18 c

Deciduous Fruit.

The berry arrivals of the early days of the week were of poor quality, owing to the hot weather. Some cantaloupe shipments from Stanislaus county also showed the effect of the heat, and prices ruled low accordingly. Berries are now coming in in better shape. Strawberries, raspberries and huckleberries are higher. Blackberries are no longer quoted. Wine grapes are scarce and in some cases of poor quality. This week is expected to see the last of these. Other grapes are generally firm, with fair receipts of good quality stock. The first full car-lot of Oregon Spitzenbergs came in from the Rogue River valley this week, and ruled the market as long as it lasted. The shipment consisted of 3½ and 4-tier apples, and these sold out quite rapidly at from $2 to $2.25 per box. Other apples have been strong, and a number of lines are quoted higher.

Strawberries, chest	$ 3.50@ 6.00
Raspberries, chest	4.00@ 7.50
Huckleberries, lb	4@ 9c
Cranberries, Coos Bay, box	2.25@ 2.50
Cape Cod, bbl	8.00@ 8.50
Apples: Baldwins	1.00@ 1.35
Spitzenbergs	1.25@ 1.60
Greenings	1.00@ 1.25
Bellefluer	1.20@ 1.70
Newtown Pippins	1.25@ 1.50
Common	50@ 75c
Pears, Bartlett, box	1.75@ 2.25
Other varieties	75c@ 1.25
Peaches, box	40@ 55c
Carriers	70@ 90c
Plums, crate	85c@ 1.00
Figs, double layer, drawer	45@ 85c
Cantaloupes, River, lugs	75@ 1.75
Watermelons, per dozen	1.50@ 2.50
Grapes: Seedless, lugs	1.40@ 2.00
Malaga, crate	60@ 85c
Muscat	45@ 75c
Black, lugs	60@ 75c
Tokay, lugs	65@ 75c
Cornichon, crate	65@ 75c
Isabella	75c@ 1.00
Quinces, box	50c@ 1.25
Pomegranates, box	50@ 85c
Persimmons, box	1.00@ 1.25

Dried Fruits.

Owing to the continued warm weather in most sections of the consuming market, the consuming demand for California prunes is reported light, but large buyers in the East are taking on long lines in the belief that there will be an early development of activity in distributing quarters. Some of these are reported to have overbought, and these are now reselling to a certain extent. Raisins are firm here and at Fresno, as well as in New York, though reports from the East indicate a slow movement there. Heavy shipments are coming into the Fresno warehouses, and arrivals in this city are large. Prices remain as before. The market for dried peaches is rather more quiet, although prices continue firm. Dried apples are firm. The prune situation is about as heretofore, with most of the crop out of the hands of the growers. The larger sizes are said to be moving a little slower than the medium sizes. In summing up the situation, the New York Journal of Commerce says: "Advices received in the trade here indicate an unsettled condition in the market for California prunes for immediate shipment out of the new season's crop. In the larger sizes, which appear to be in excess, the weakness is greatest. The medium counts are generally held well up to quotations, as these are in comparatively small supply and seem to be most wanted. Offerings of straight Santa Clara 30s were made from some quarters on a 7½c f.o.b. four-size bulk basis, and 40s alone on a 6½c f.o.b. four-size bulk basis, but for 40s to 60s in equal quantities 5⅞c basis seemed to be the best that could be done, most packers wanting 6c basis. Offerings of 70s to 90s were quite freely made, without reference to locality of production, on a 4¾c f.o.b. four-size bulk basis, and it was said that some Northern fruit might be bought in these sizes on a 4½c f.o.b. bulk basis. Spot prunes in New York are reported to be well controlled and in somewhat limited supply, and while the demand at present is moderate, the tone of the market is firm.

"No change in the market for peaches here or on the Coast is noted. The spot demand was light and local buyers seemed to be showing little if any interest in forward shipments from the Coast. However, the tone of the market was firm and prices remained as previously quoted. Apricots in all positions were quite steady.

"Telegrams received from the Coast reflect an easier feeling in the market for seeded raisins owing to the disposition shown by some outside packers to shade quotations made by the Associated. According to report, the so-called independents were willing to book orders for fancy seeded in 16-oz. cartons at 6⅝c f.o.b. Coast for prompt shipment, but no confirmation of the report was obtainable from representatives of outside packers here. Some of them absolutely denied the truth of the story. However, the effect of these advices was to futrher unsettle the market and confirm local buyers in their determination to defer purchases for late fall and winter requirements, and imparted an easy tone to the market.

Evap. Apples, 1913	6½@ 8 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4½c
Black	2½@ 3½c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4¾@ 5 c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4¼c

Citrus Fruits.

The arrival of the first shipment of this season's grapefruit from Tulare county and the receipt of a heavy shipment of limes from Mexico were the events of the week in citrus fruits. As a result, a new item has been added in grapefruit, and a sharp drop reported in limes. Oranges show no change in prices or otherwise.

Oranges (per box):	
Valencias	$ 4.00@ 6.00
Grapefruit, seedless	5.50@ 6.00
New Crop	4.00@ 4.50
Lemons	4.50@ 7.50
Limes	5.50@ 6.00

Nuts, Honey, Hops, Etc.

NUTS.

Walnut arrivals have been quite free this week, and the evidence is that the crop will all be moved at the prices nam named, which are f.o.b. Los Angeles. Stocks of both almonds and walnuts are limited here and in the consuming markets, and the market is very firm.

New York Journal of Commerce says:

"Notwithstanding the prospect of lower prices on imported stock, as a result of the lower duty, the Coast producers raised their prices on the current season's output, being actuated by crop conditions. The market as represented by these quotations is decidedly higher than a year ago, the advance in No. 1 and No. 2 Softshell amounting to 2c, while the price on budded is 3c higher. Some standards of 1913 crop are offered at 15½c. The trade here are yet disposed to look carefully into the situation before confirming subject to approval of price contracts, but a number of buyers are said to have

promptly confirmed their contracts in spite of the higher quotations. Imported walnuts on the spot of good quality are in rather light supply, and while the demand, as usual at this season, is moderate, the tone of the market is steady. Stock to arrive is offered on the basis of the new tariff."

Almonds, new crop—	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop—	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HOPS.

Those holders of hops who were last week anticipating a higher market nad their hopes realized this week. There has been a general advance of 1c affecting all grades quoted on this market. Prices are firm at the advance, and advices from Oregon report a similar condition there. New York rep'rts a steady market.

1913	23@25c

HONEY.

There has been very little trading in honey this week. Receipts have been about up to the normal, but not excessive, and there has been no change in the tone of the market.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

The selling demand has been light, but as arrivals have been small, there are no great accumulations and no change in values.

Light	30 @32 c
Dark	28 @30 c

Live Stock.

It is beginning to look as though beef prices here would have been advanced recently except for the Australian arrivals and for the fear of still further encouraging this movement. Prices in Portland were advanced the latter part of last week, and the movement may later be extended to this market. There has been an increase in the offerings of dairy calves this week, but not sufficient to cause any weakening of the market. The local demand for dressed meats has been large this week owing to the Portola celebration.

Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	8¼@ 8½c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4 @ 4¼c
Ewes	3¼@ 3½c
Lambs: Suckling	5¼@ 5¾c

DRESSED MEATS.

Steers	12¼@12¾c
Heifers	11½@12½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

The San Francisco market has not yet responded to the improved tone in the East, and the movement here is very slow. Holders are not disposed to let go at present prices, and buyers are showing very little interest.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

Tanners are said to have very few hides on hand. They are buying to meet immediate needs only. The only new business done is in the country take-off, the output of the local slaughter-houses having been sold ahead to the end of the month. The market continues firm.

Heavy Steers, over 56 lbs.	15½c
Medium	15 c
Light Steers, under 48 lbs.	15 c
Heavy Cows, over 50 lbs.	15 c
Light Cows, 30 to 50 lbs.	16 c
Kip	13½@15 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	26 @27 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.75
Medium	2.25
Small	1.00
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

There has been no further important movement in horses this week, and the situation remains as established by the last auction. The feeling seems to be a little stronger in some quarters, though the absence of rain and the high price of feed, as well as the general uncertainty of business conditions, continue to act as influences on the other side. Offerings are very few and of uncertain quality, though a little better demand would probably bring out plenty of desirable stock.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	100@150
Wagon Horses, 1250 to 1350	100@125
Delivery Horses, 1050 to 1250	75@100
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

WANTED—Three live hustlers to work in our subscription department. Address your replies to the PACIFIC RURAL PRESS and tell us in your first letter what experience, if any, you have had. We pay salary to the right men.

NEW BOOKS.

A pioneer book for rural schools, along bookkeeping lines, has just been issued by the American Book Co., Washington Square, New York, the price being 65 cents. The book presents the principles of bookkeeping in the simplest possible manner, yet with sufficient fullness to enable the pupil to understand any ordinary system of double-entry bookkeeping. It makes practical application of these fundamental principles, and provides an effective and easily understood system of keeping Personal Accounts, Household Accounts, Poultry Accounts, Live Stock Accounts, and finally, but most important of all, Farm accounts.

Another new book comes to us from the Macmillan Company of New York, entitled "Educational Resources of Village and Rural Communities," edited by Jos. K. Hart; price $1 net. This book is issued to meet the growing demand for a more fundamental knowledge along physical and moral resources of the smaller communities. Each subject is represented in a general way as an aspect of life and resources of any community. To those interested in such work the book will prove valuable.

"Materials and Methods in High School Agriculture" is still another new book issued by the Macmillan Company of New York. The authors are W. G. Hummel, of the University of California, and Bertha R. Hummel, who have had large experience in the practical side of the work discussed. The book goes into the details of agriculture in the curriculum, teaching methods to be employed, equipment, first, second, third and fourth year's work, animal industry, dairy work, poultry course, horticulture, school farm, etc. The whole work is very valuable to teachers, is well illustrated, bound in cloth, 375 pages, price $1.25 net. Address the publishers.

Some recent sales of farm land in California include the 2000-acre ranch of John Mohr, north of the Merced river near Hopetown, for $75,000; the 3000-acre ranch of the Tisdale Ranch Company, in west Sutter county, to T. Harrington of Colusa; the T. Boone Miller hop ranch, near Healdsburg, to W. M. Richardson, for $65,000; and the 200-acre Broughton ranch, on the Tuolumne river, to Bowren Bros., for $35,000.

Round Wheels SLIP and PACK

There is no essential difference between a tractor with large drive wheels and a road-roller. Both produce the same result. They pack the ground.

To pack the soil allows moisture to escape. It destroys the loose mulch which prevents evaporation. Would you want a road roller on your land when doing the work shown in the illustration?

The weight of the

CATERPILLAR

Reg. U.S. Pat Off.

GAS TRACTOR is distributed over such a large bearing surface that its weight to the square inch is but seven pounds. It will not pack any soil.

Again, if you practise deep-tilling, a round wheel tractor cannot do its work in deep-tilled soil. Its "footing" is insecure. The soil is thrown out from under the wheels and they bury themselves.

Compare the operation of the HOLT CATERPILLAR to the action of a man who places a board over a soft spot and walks on the board. The board supports his weight.

The HOLT CATERPILLER lays its own track, then rolls over it. It cannot sink in the softest ground.

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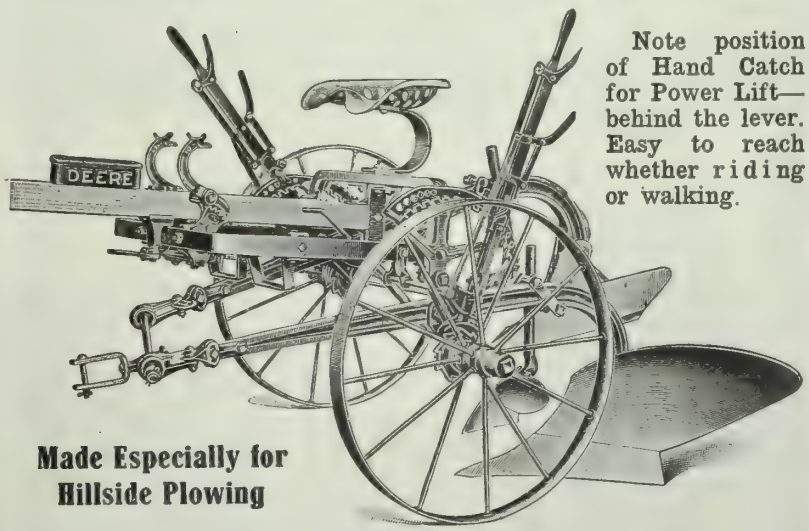

Note position of Hand Catch for Power Lift—behind the lever. Easy to reach whether riding or walking.

Made Especially for Hillside Plowing

HIGH GRADE STEEL CONSTRUCTION

Entirely eliminates dead furrows and back furrow ridges. It is the best plow for irregular fields.

Wheels are wide apart and set so plow will not tip over.

Furrows can be turned one way, leaving the surface uniform and avoid washing by heavy rains.

A JOHN DEERE TWO-WAY SULKY will last twice as long as ordinary sulky plows because when one bottom is at work, the other is hung out of the way.

You can use this plow on *level land* as well as for hill-sides.

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Write Department B for quick response.

JOHN DEERE PLOW COMPANY, San Francisco, Cal.

The National Conservation Congress has appointed D. P. Simons of Los Gatos as vice-president for California and Walter N. Moore, of Santa Barbara, as secretary. The Congress will meet in Washington November 18 to 20.

Fairy Magic—Telephone Reality

A tent large enough to shelter his vast army, yet so small that he could fold it in his hand, was the gift demanded by a certain sultan of India of his son, the prince who married the fairy Pari-Banou.

It was not difficult for the fairy to produce the tent. When it was stretched out, the sultan's army conveniently encamped under it and, as the army grew, the tent extended of its own accord.

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As these needs grow, and as the number of telephone users increases, the system must inevitably expand. For the Bell System must always provide a service adequate to the demands of the people.

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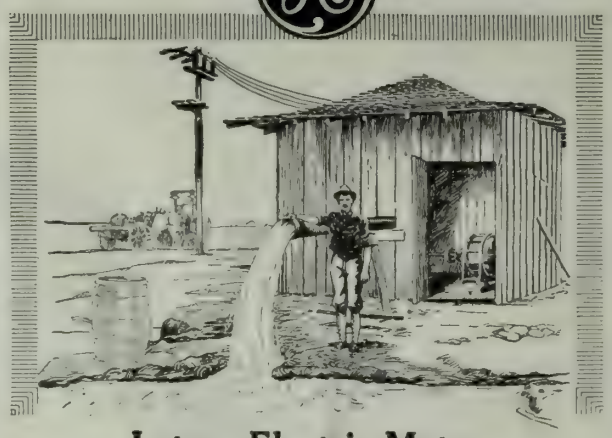

Let an Electric Motor Cut Down Your Irrigating Cost

In the picture is shown a pumping plant operated by a direct connected G-E motor on the Ventura Madera Ranch, at Madera, Cal. Reproduced from a photograph, it shows the large volume of water this small but powerful motor is capable of delivering.

WATER COSTS MONEY—Your supply of water can be economically controlled, a mile away, if necessary, as easily as you switch on and off an electric light.

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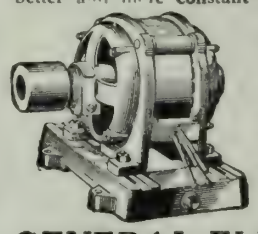
G-E Electric Motor For Ranch Use

Repairs and replacements of parts need hardly be considered. With no valves or delicate mechanisms to get out of order, a G-E ELECTRIC MOTOR will outlast the best engine and give better and more constant service.



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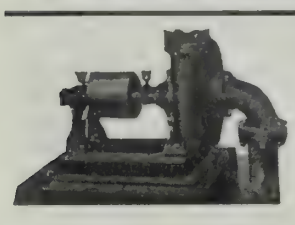

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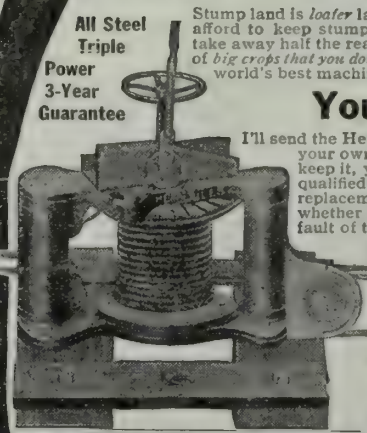

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The California Dairy Industry.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

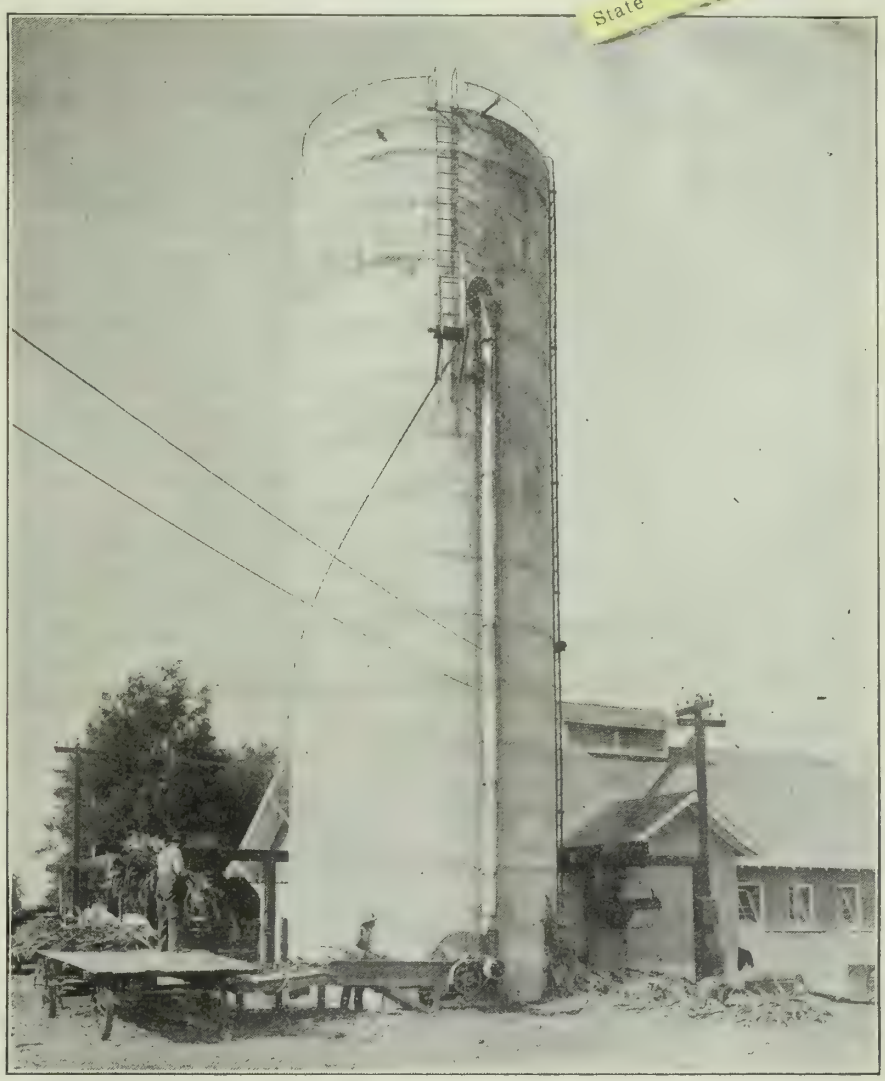
Before any industry can become permanently established, it must first demonstrate that it is based upon a sound financial footing, for while a certain amount of capital will follow fads and fancies, returns must be comparatively certain for any vast development.

This circumstance not only applies to all commercial undertakings, but to agricultural pursuits as well, a good illustration being shown in the gradual increase made by the dairy industry in California, and more especially in the San Joaquin and Sacramento valleys.

Appearances vs. Results.—True, the industry as conducted by many of the dairymen in these large interior empires does not present a particularly pleasing or prosperous aspect; yet the number of really successful establishments are becoming numerous enough to demonstrate two things: first, that high-priced land owned in either section returns reasonably certain rates of interest if planted to alfalfa; and secondly, that the rate of interest as well as the fertility of the soil are greatly enhanced by the addition of a moderate expenditure in good dairy cows and equipment. Happily, those who are taking up the more advanced methods are, as a rule, men or companies that have always been noted for their hard-headed and conservative ideas.

In the Sacramento valley, instances of this are found on the Stanford Ranch at Vina, and on A. W. Morris & Sons place near Woodland. In the first case is found an old herd being renovated through selection at the milk-pail and the use of high-bred sires; while with the latter one the same methods are being pursued with a herd more recently established.

In respect to development of new ranches, the San Joaquin valley has made the most remarkable strides of any locality, and instances are too numerous to mention at this time; however, the renovating system is also strongly in evidence, as shown by such herds as the Rancho Dos Rios Jerseys in Stanislaus county. Here may be seen, with a herd that for years practically laid dormant, a revived interest in everything progressive.



Silo Topped With Water Tank—Alfarata Ranch of C. E. Childs, Near Merced.

Moving farther south, it may be seen that new ideas are being incorporated on the dairy of Muller & Lux at Dos Palos, where silos and pure-bred Holsteins are replacing the pioneer methods so long in force.

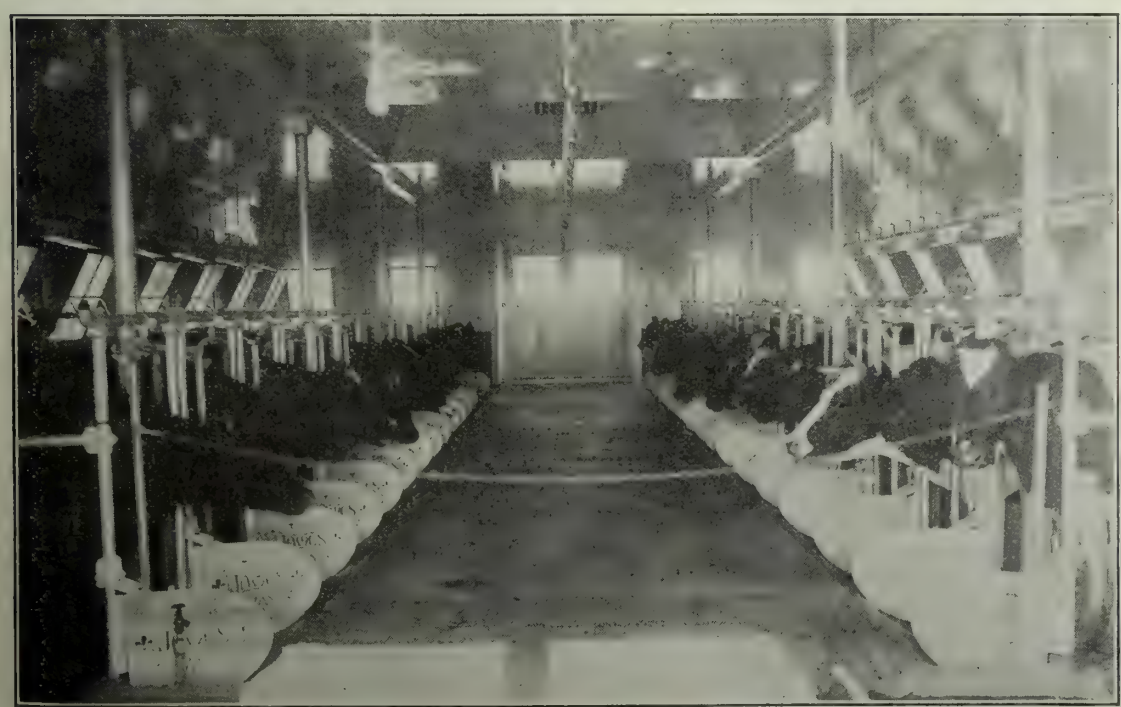
Space would not permit the telling of all of the big undertakings of the above kind, to say nothing of the smaller ones, which would, if carefully compiled, present almost unbelievable data.

The point most forcibly demonstrated from the above illustrations is that profitable dairying is an actual reality today and not a chance or happen-so; neither is it a hobby of rich men who are building show places for their own or friends' amusement. Cold, hard facts are the only weapons of progress on the above ranches.

For economic reasons it is logical to assume from these illustrations that as long as profitable land development depends to a large extent upon alfalfa, so too it must depend largely upon some form of dairying, for there is no other farm animal so well able to turn alfalfa into bank checks as the dairy cow.

On the supposition that the dairy cow is a real necessity as long as alfalfa is grown, and that alfalfa will always be grown in larger

(*Continued on Page 420.*)



Interior of Cow Barn Shown In Rear of Silo, Alfarata Ranch.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Oct. 28, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.00	1.63	3.68	74	42
Red Bluff	.00	T	2.25	90	52
Sacramento	.00	.01	1.34	88	50
San Francisco	.00	.08	1.44	78	48
San Jose	.00	.17	1.18	86	38
Fresno	.00	.33	.94	90	52
Independence	.00	2.52	.84	82	36
San Luis Obispo	.00	.98	1.71	72	46
Los Angeles	.00	.03	.77	82	54
San Diego	.00	.10	.49	74	58

The Week.

Quite a calamity has befallen. The Public Service division of this journal, which we organized with such eclat in this column last week, to assure a good rainfall this winter, has dropped out its driving wheel, and therefore all its gears will whir no more. We must explain the catastrophe.

It will be remembered, of course, that our Public Service Weather Forecasting Aggregation was clustered around the declaration of the Oregon Weather Prophet, Mr. Rehart, that as the summer is, so will the following winter be, inversely. If the summer is hot, the winter will be cold, or, expressed in terms of water, the winter will be wet. Therefore, as last summer was hot, the coming winter will be—just what we all desire: such was Mr. Rehart's prophecy. But since our last issue, Maurice Connell, U. S. Weather Observer at San Jose, has been rumaging the records and has published this murderous conclusion:

"I have tabulated for each year from 1853 to 1901, the mean summer temperatures and the following season's rainfall for Sacramento. It is a singular fact that if averages were to determine the truth or falsehood of the theory on which the Oregon Weather Prophet bases his forecast for the coming season, the reverse of what he says would be true." Again if averages are disregarded and the most striking instances chosen: "the greatest rainfall recorded for any one season of the 48 years under consideration was the winter of 1861-2. The coldest summer of record for Sacramento was that of 1861. Not only that, but the record also shows that the driest season for Sacramento was preceded by a summer above the normal in temperature."

Thus it clearly appears why the Oregon Weather Prophet must be dropped out of the dirigible of our Aggregation. We cannot carry a prophet who is wrong on the average and wrong in most striking instances also. There do not seem to be any wings for him to fly with and our Aggregation must be buoyant enough to fly singly in case of collective casualty. It is, of course, easy to see that the precipitation of the Oregon Weather Prophet is due to his mingling the art of prophecy with the science of common things. If he had been content to cling to his art and simply make declaration, with fitting shake of head and finger, his prophecy would have endured until the clouds burst and the rising water lifted him to the pinnacle. But when he cited observation of facts, and thus appealed to science, he erred both in policy and method and finds his afflatus punctured by an observer who holds to the law and has no use for the prophets.

But all this will have no affect on the rains: they will come along all right.

The Bankers Open a School.

We are very glad to learn that the bankers of the United States through the American Institute of Banking, which recently held a convention at Richmond, Virginia, has for its policy "to study all sides of public questions, particularly those relating to business and banking;" and gives its endorsement "to all movements having for their object the teaching of economy, prudence and thrift, and declares that the institute lends its hearty support to the study and development of the agricultural interests of the country." These are laudable policies and we hope they will be successfully pursued. There are many things about banking that we really wish to know, and we are glad that the attitude of bankers toward the public should be this: "To use our best efforts by precept and example, to continue the confidence of the public in our banking institutions by exercising courtesy, patience, helpfulness and co-operation toward all people, and by promoting publicity by banking conditions in every legitimate way."

This manifestation of a humble and contrite spirit seems to have followed an address by Secretary Bryan during which he said, presumably, some bad things about bankers for the manipulations, concentrations and combinations which they did in the past but of which they have now repented in coin-sacking and gold dust. Mr. Bryan probably reminded them that the old style of financing agriculture which they practiced does not make for the public welfare, which reminded them to remark, as quoted above, that they really have a great affection for farmers and farming. And so we have the bankers lined up for the development of agriculture, and we are very glad they will undertake to promote publicity by banking institutions, for, although we are quite sure they do not yet know all that they can do for farming by making agricultural credit popular at rates and terms which will enable the farmer to live and get out of debt on a better farm than he had before, we believe the declaration of a desire to study and understand these things is sincere and of much promise to the nation.

What Is It Worth to Handle Money?

This is one of the things we hope to learn from the bankers' educational effort. It is a question of tremendous importance, for money, next to water, light and air, is perhaps the most universally essential commodity. It should yield a fair return to those who honestly own it; it should be available at fair cost to all those who can use it in enterprises which are for the public benefit. Now what is it fairly worth to take it from one class and lend it to another? If we knew the answer to that question we could write some pointed paragraphs right away, but we must wait until the bankers' educational effort reaches us. Meantime we have to guess and wonder, like other ignorant people. For example, we read in a newspaper the other day, in a statement by the president of a newly organized agricultural credit organization, these words: "The rule we have laid down and propose to follow is to charge the borrowers not more than two per cent more than the money costs us. * * * The savings banks enjoy a margin of about that amount, or a little more, and our business is very closely akin to theirs." We do not intend to intimate that this is not a fair statement under conditions prevailing, but we must claim that we do not see how it will work when another sentence from the same statement is considered, viz: "The money with which loans will be made will be largely obtained in the cheap money centers of Europe and the Eastern States, etc." The people in those cheap money centers of Europe at least know that one-half to one per cent is the common charge in Europe for handling money in ways which the two per cent corporation proposes to imitate, and they know by long experience that even so small a cost for handling as that yields satisfactory profit to private bankers and creates large reserve funds in no-profit co-operative credit associations. Of course, the European investors may be content with their four per cent and not worry about the American borrowers paying six per cent for the money which yields them four, and so the plan may work well enough at the other end. We hope it will, for we need all the money for agricultural development and improvement that the world can spare. But how about the borrower who knows that one-third of his interest goes simply for the handling and not for the use of the money? Perhaps it will be all right for him also for a time, for six per cent may be a shallower gouge than he is getting now by the present plan of furnishing money to farmers. But we are quite sure that to meet the need of money for farming, as nearly everyone is now seeing and conceding it, to pay half as much for the mere handling of money as the owner of the money gets for the use of it, is not the way to meet the need. The bankers educational propaganda should tell us in due time whether they expect to handle this new business on the same margin as the old and, if so, in what does their proffered assistance to agricultur consist?

Why Does Agriculture Need Credit?

One is apt not to think deeply enough of the agricultural need of capital. To the great bankers of the country it simply meant moving of crops—something to lend the grain dealer to buy with or to lend to the country merchant to dole out to his customers, etc. That is probably the least of all agricultural needs. The real need is for development in general and to enable farmers, generally young, to get upon land of their own. The whole fundamental proposition was excellently put by Dean Hunt at the State Grange meeting in San Jose. His subject: was "How Can a Young Man Become a Farmer?" and he answered the question by advancing a scheme of farm credit. He stated that it is lack of credit that is continually forcing young men to take up wage earning occupations and leave the farm, which, as a rule, only sufficed for the needs of the father and mother and not for their matured children desiring to raise families of their own. "Most of the business of the world is conducted on credit," he stated. "Farming is only different from railroading in that it requires refinancing at more frequent intervals. It is lack of credit that prevents those who undertake farming from putting into it the capital needed to get the best results. Every generation is going to find it more difficult to till the soil properly unless some workable method of financing the land can be found." These are a few lessons for the bankers' new educational

movement. It is not surprising that the financiers do not understand them. They are rather new in this country, but they have come to stay.

A Year of Events.

California has probably never had a year so full of commemorations as that which is now closing, and it is but the prelude to greater fullness thereof which will continue until the close of the World's Fair in 1915. Last week Balboa, Portola and the rest of their wandering race came forth and stepped back into history after giving San Francisco the gayest few days since the revelry of its beginning. Honors to the memory of our Spanish forerunners were genuinely and picturesquely paid, and it is not likely that coming generations of California will ever neglect to remember the old hustlers of the main as heroes of matchless mirth-making. So long as Spanish names adorn our geography, Spanish holidays will lighten the sombreness of our California-American life. But after the Spaniards will come the events celebrating the wedding of the oceans. It is a good scheme of the San Bernardino people to announce their fourth national orange show for the week opening February 18, to be the citrus fruit growers' celebration of the opening of the Panama canal, and the plans already formulated will make it great. The argument is a good one. The opening of the Panama canal will mark the start of a new era in transportation, and the cost of marketing the fruit of the State is to be materially reduced. Experiments already made with shipments by way of Panama show fruit can be shipped over that route safely. The fruit men are to duly celebrate the opening of the new traffic lane. It is impossible to foresee how great its influences may be upon the development of California, but there is little danger of exaggerating them.

What a Change in Half a Century.

Speaking of pioneers and Panama reminds us of a wonderful change which has occurred within two generations. It was currently reported among the pioneers that certain of them relied greatly upon the continental barrier-crossing to readjust their domestic relations because it was practically impossible for the wives they left behind them to intrude upon their new-found domestic blisses, somewhat aboriginal or otherwise. The approach of the opening of the Panama canal does not exactly put the boot on the other leg, but the slipper on the other foot—we may safely say. A San Francisco paper cites the case of Mrs. Stefania Gutowski, who, anticipating the ease of reaching this city by canal, applies for a divorce from Antoni Gutowski of Boston before cheap water rates between the two seaports become effective. Mrs. Gutowski states in her complaint for divorce that she fled from Boston to San Francisco to get as far from her husband as possible, and that she believed herself safe because of the cost of transportation from East to West. But soon the canal will change it all and she must seek other prot ction from Antoni. She desires to have a little fun in this life, which she could not do if obliged to keep her eye irremovably on the Golden Gate.

Queries and Replies.

Getting a Quick Start of the Kind You Want.

To the Editor: I have several prun trees from which I wish to propagate about 200 young trees. Kindly advise the most successful method to follow. I might state that I desire to get bearing trees in the quickest and most satisfactory way, and I wish to be informed if I should set out ordinary stock (prune 4 to 6 feet, say) next spring and graft same over the following spring, or procure myrobolan stock and bud into it next June. Possibly some other method should be followed. Of course, I realize that this is the work of nurseries, but I desire to try it, nevertheless.—P. M., Chico.

There are several ways of doing what you desire, but we should do this: Buy either myrobolan seedlings or budded French prune trees on myrobolan—whichever you can get most handily from the nursery. Plant these, say, in February or when the ground is in good condition, in orchard form as you wish them to grow. Select small but thrifty trees and whip or tongue graft them, about 18 inches from the ground, with scions from the trees you wish to reproduce. Set the grafts as the swelling buds on the stock indicate the beginning of activity. Wrap the whip grafts with a waxed band and whitewash over all, from below the ground to the top of the scion, and look out for suckers which may take too much sap. Those grafts which grow will make you the trees you desire. Grow shoots from all stocks on which the grafts fail, and bud them soon as you can get plump buds to work with, which will be in June, and reduce the growth above them to start growth on the buds this summer. In this way you ought to get a full stand of the kind you want (on all transplants which start at all) the first summer in the orchard.

Onions and Mangels.

To the Editor: Is it too late to sow onion seed to grow sets to plant in December? Is it too late to sow mangel wurzel seed?—R. A., Galt.

It is certainly too late to plant onion seed to get dry sets this season. To get dry sets the seed is usually thickly sown in the spring on land which will go dry and force the little plants to ripen. It is, however, about the right time to sow seed to grow small onions for transplanting green, and this is much better than growing from sets. You can get a publication on this way of onion growing, which has been practiced in California for a great many years, and is becoming popular in the Eastern States, by sending for Farmers' Bulletin 354 and 434, published by the U. S. Department of Agriculture, Washington, D. C. California methods are described in detail in our book on "California Vegetables."

You can plant mangel-wurzel seed now if the ground is properly moist but not too wet, and you can also plant mangel wurzles at any time during the winter when the ground is in proper condition, although the soil is apt to be too wet during the months of December and January.

Can You Make Oranges Out of Corn Stalks?

To the Editor: I have popcorn planted between the trees on my 20-acre young citrus grove. It is my present intention to turn the stalks back to the soil. What would be the best method of doing this, so as to have the same incorporated in the soil in a most satisfactory manner? The corn is now in shocks and I was wondering if these stocks could be laid crosswise and a disc run over the same and then plow them in in the spring, or would it be feasible to rent a gasoline corn stalk chopper and cut them up?—B. C., Los Angeles.

If you are dealing with a light soil, the plowing in of the stalks will give you more trouble than could be compensated for by the humus which they might ultimately produce. On a heavier soil, they can be hashed up and plowed in as you propose. We doubt, however, if their value would warrant you in even hiring machinery for the purpose. The best proposition we can think of would be to trade them to some local cow feeder in return for as many loads of manure as he is willing to give you for them. If the soil is light, we would prefer to give them away than to have the trouble of handling them. The stubble and roots will probably be all of that kind of matter which can be worked into the soil without too much expense.

Fuller's Rose Beetles.

To the Editor: We find rose beetles on adult orange and lemon trees in our grove. There are traces of where they have eaten leaves, but not extensively. Are they liable to increase in numbers and become a danger. If so, what can we do to protect the trees against them.—D. E. Rialto.

Fuller's rose beetles fortunately do not become numerous enough to do serious injury to mature trees, although they are grievous pests on grafts of young trees just taking foliage. As they do not fly, they can be kept from climbing the trees by placing a band of cotton batting loosely around the tree, holding it in place with a string, or a band of tangle-foot can be employed. To save the foliage, the trees may be sprayed with lead arsenate, about six pounds to a hundred gallons of water, but usually orchardists do not pay much attention to these insects except on grafts and young trees.

Rabbits Like Cactus.

To the Editor: I planted 25 cactus plants, and although I have a rabbit fence, yet they ate every one even with the ground. I replanted same in by garden instead of field, cut the eaten part off in natural shape and left about 2 inches sticking out. Will these grow again or shall I plant new ones?—Subscriber, Burson.

Presumably they will grow again by sending out new pads from the remaining parts, if these remain sound. The current dry weather favors that. It was not necessary to cut back; the natural shape has nothing to do with the growth of the plant. If the wound made by the rabbits had dried well the rest would probably have kept well, if the roots were healthy, and there would have been more points to start growth than after you had pared it down. But this is all a guess—we have no ambition to practice as a cactus doctor—as we recently stated.

Re-planting After Crown Gall.

To the Editor: I have an old peach orchard full of crown gall or black knot. Would it be safe to plant to new orchard without infection, and is any particular variety of fruit trees immune from this disease?—E. R. T., Vacaville.

We should work the land deeply, getting out and removing all root-fragments and replant on lines between the old rows whatever we thought it likely to be most profitable to grow. Plant trees free from knots and sign of their removal and watch the crowns and main roots by uncovering once a year, the base of the trees—cleanly cutting away and Bordeauxing the wound; if any knots are found. Peach and almond roots are most subject; cherries, apricots and plums next; pears and apples least—according to our observation.

Planting-Out Rooted Olives.

To the Editor: I have about 30,000 olive tip cuttings, all rooted. Would you advise me to plant them in the nursery now? I figure they have a month or more to establish themselves in the ground before frost.—H. C., Lindsay.

The planting out of rooted olive tips can be successfully done in the autumn providing the ground is moist enough to protect the little plants from drying up before the rains come. Of course, such planting is safer in places where frosts are absent or very light. On lowlands subject to sharp frost much injury might be done. There would be much less risk all around in planting out in February when the ground becomes warm and permanently moist.

The California Grape.

[By R. SCHMIDT, Assistant in Viticulture, U. S. Department of Agriculture, at California Nurserymen's Association Convention.]

The Imperial Vineyards.—Being desirous of taking a glimpse of California viticultural industry, I board the train at Calexico and travel northward through the Imperial valley. In 1900 I could not have done this, for then there was no railroad in operation between Calexico and Imperial Junction. In 1902, however, water for irrigation purposes was drawn from the Colorado river, and crops that brought quick returns were planted by the settlers. Later on a few varieties of table or shipping grapes were planted. It was soon found that conditions in this valley were conducive to rapid vine growth, and that the fruit ripens two to six weeks earlier than in any other part of California excepting in the neighboring Coachella valley where the climatic conditions are practically identical. This extends the season from the middle or early part of June to the latter part of July. Vines bear when very young, and I have seen quite a little fruit on one-year-old plants when they were well cared for.

The soil is of unusual character. There is probably none like it except in the inundated sections along the Nile or in portions of China. The greater part of the valley is below sea-level, and consists largely of sediment or silt from the Colorado river. This silt is rich in all kinds of plant food with the exception of nitrogen and humus. For this reason it is good practice to plant leguminous plants and plow them under. Growing alfalfa on the land for several years and plowing it under is very beneficial, the deep roots of the alfalfa also acting mechanically to loosen the ofttimes impermeable soil. The amount of sediment brought into the Imperial valley by the Colorado river in one year's time has been estimated would cover one square mile 50 feet in depth. So water from the river used in irrigation continually enriches the land and, with the exception of nitrogen and humus, fertilizers will not be necessary for a long time to come.

Irrigation in the Imperial valley must be done at the proper time, repeatedly and in the proper manner. Much of the soil is rather hard and compact, not admitting water freely. A long-continued irrigation, especially by the flooding method, often does not appreciably moisten the almost kiln-dried soil a foot beneath the surface. Allowing the water to run in ditches is the more satisfactory way, and will also to some extent prevent the alkali from reaching the vines. If the irrigating is not done thoroughly the first year or two after planting, the young vines will have a shallow root system, and will dry out in that hot and arid climate.

As regards the climate, records taken at El Centro show the maximum to be in the neighborhood of 115 degrees. The average rainfall is probably about 2.75 inches, and coming as it does a little at a time, does little good.

The varieties principally grown are Malaga, Sultanina (erroneously called Thompson Seedless), and Muscat of Alexandria. Of these, the Sultanina is the earliest. Other varieties have been tried to a small extent, such as some of the white, red and black Persians, Chassalas, and some Luglienga and Tokay. The Persians have generally been unprofitable, due to lack of knowledge of making them bear better. They are later than the Sultanina.

As in other new sections, culture, pruning, etc., are not well understood by those planting vineyards, and many errors have been made. Until these are corrected the best results cannot be obtained.

Proceeding north, no stop is made in the Coachella valley, as the conditions, at least climatic, and as far as grape varieties are concerned, are similar to the more southern country.

Largest Vineyard in the State.—We next reach San Bernardino county, in which the largest vineyard in the State is located, consisting of 4000 acres, all wine grapes. The soil is of a gray-brown gravelly sand, mapped as Maricopa gravelly sand. It extends with very uniform texture to an unknown depth. It holds moisture remarkably well. I have been there late in the fall when no rain had fallen, and was able to stir up moist soil with the tip of my shoe. The soil is so loose in that section that when sandstorms occur after a long drought some vines are completely covered with sand and others are almost uprooted by it.

The greater portion of the grapes grown in this county are for wine. Not only is sweet wine made, but dry wine as well. The varieties grown are mainly Golden Chassalas, Zinfandel, Mararo, Burger(?), Carignan, Val de Penas, Pedro Ximinis, and Feher Zagos. The sweet wine made is of good quality, and the dry wine is very good considering the hot climate and soil.

San Joaquin Vine Interests.—Across the Tehachapi range is the large and interesting San Joaquin valley. The soil of the San Joaquin valley varies all the way from a very light granitic, angular sand to an adobe. The texture sometimes changes very suddenly from a loose sand to a sticky consistence within a few hundred yards.

Old vineyards are usually not irrigated, though in dry seasons as this, it has been found necessary in some parts. Young plantings are often watered to start them.

The grapes in this valley are grown for wine-making, raisins, or for table use or shipment. For wine-making, the following varieties are chiefly grown: Feher Zagos, Mission, Zinfandel, Lenoir, Franken, and Gray Riesling and Muscat Alexandria. Pedro Ximinis is grown to a small extent for sherry making, as are Trousseau and Alicante Bouschet for port. When raisins bring a profitable price, only second crop of Alexandria is used for wine-making.

Pedro Ximinis should be cultivated more extensively, for it is a superior sherry grape and bears very heavy crops. The sweet wines are good, but better could be made by growing varieties that are of better flavor and bear as well—I would mention such varieties as Mantua de Pilo, Vermentino, and Kadarka.

Although the San Joaquin valley can never expect to compete with the northern coast counties in the manufacture of the best quality of dry wines, I am certain they can be improved considerably by planting more of the better varieties and by up-to-date and scientific manipulation of the wine in the cellar.

Sultanina, Sultana, and Muscat Alexandria are the raisin grapes almost universally grown, although a poorer raisin is sometimes made of Malaga and Feher Zagos.

The shipment of table grapes is also an important industry here. The varieties generally grown are Malaga, Emperor, Tokay, some Purple Cornichon, Black Morocco, Rose of Peru, and a little Dattier de Beyrout.

Grapes for Long Keeping.—With the coming of the sawdust pack, grapes with good long-keeping qualities are in demand. For this purpose the Emperor is difficult to surpass.

The Almerian sort, the Ohanez, has also proved to be an exceptionally good shipper, even excelling the Emperor. This variety has been known in California for a good many years and is not new, but the pruning of the same has not been properly understood, and the bearing quality has been deficient for that reason. In Spain these Almerian varieties are raised on overhead trellis or Parrales system, something the same as the Rotundifolia are trained in the southeastern part of the United States. Large quantities of these Almerian grapes are shipped to our markets each year in cork dust.

About 20,000 drums of grapes packed in sawdust were shipped out of the San Joaquin valley last year. Emperor constituted the majority of the pack. A few Tokay and Cornichon were also shipped. Some shipments made in cork instead of sawdust were not satisfactory. About fifty cars will be stored from California this year.

On tasting some of the varieties after they had been in sawdust and cold storage for several months, I found, at least to my taste, that the flavor was actually improved. There are a number of other varieties which seem to be good keepers, but are still in the experimental stage.

It may be that my taste is not normal, but to me a grape juice made from a Concord is far superior to that made from a Vinifera, as Zinfandel, Burger(?), Mondeuse, and so on. California grape juice makes a refreshing drink, but the flavor is lacking. Unfortunately, the slip skin does not thrive or bear well in the state under ordinary vineyard conditions.

It is in this valley as it has been in all phylloxera-infested districts: there are always some vineyardists who don't believe in it. It seems impossible, after what has happened in some of our northern valleys, and is still happening, that there should be any grape-grower who does not believe in the pest or its destructiveness. Still it is the case at this late date.

Phylloxera has been known to exist in the neighborhood of Fresno for over twenty years. If the conditions had been the same as in Napa county, for instance, there would probably be few vinifera vineyards remaining in this locality.

The varieties that have been used as resistant stock are mainly Rupestris St. George, Riparia x Rupestris 2309, Riparia x Rupestris 3306, Riparia x Rupestrie 101, Riparia x Rupestris 101-14. A few Aramon x Rupestris Ganzin No. 1 and Mourvedre x Rupestris 1202 have been tried. As at other places, not all of them have been successful. Sometimes the stock was not well adapted to the soil in which it was planted, or the vinifera was uncongenial to the stock on which it was grafted. Alexandria is one of the varieties for which it is difficult to find a congenial stock.

The Lodi District.—Farther north is Lodi, the great Tokay section, as well as an important wine district. The Sacramento valley is adapted to the wine, table and raisin grape. The varieties planted are practically the same as those of the more southern San Joaquin. The Sultanina and Sultana are both dried and also packed for shipment as a table grape.

Zante Grapes.—Currants, more generally the white variety, are cultivated to a small extent near Yuba City and near Lincoln in Placer county. The white currant bears well at the latter place on a soil composed mainly of decomposed granite and shale. The grape ripens the end of August. Rather a random method of pruning is adopted, from six to twelve canes and six to eighteen spurs. After ten or twelve years, I was told, the vines declined. This, of course, is to be expected under such a system of pruning.

Grape-growing extends a little north of Vina in Tehama county. At Vina was once the largest vineyard of California, containing 5000 acres, but this large acreage has fallen away until at the present time the vineyard contains only about 1500 acres.

Napa and Sonoma.—Leaving the inland counties behind, we come to the beautiful Napa and Sonoma valleys. The former is noted for white wines, the latter for red, though red and white both are of good quality here.

The times of Johannesburg Riesling, Crabb's Burgundy, Gutedel, Carbenet Sauvignon, Traminer, Semillon, and so on have about passed, and we have in their stead Petite Syrah, Zinfandel, Mataro, Carignan, Mondeuse and Mourastel as red grapes, and Burger, Green Hungarian and Sauvignon as white grapes. All these last named sorts are excellent producers, while the first mentioned are of extra fine quality, but the amount of production rather uncertain.

Grape juice is manufactured to a small extent in all the coast counties where grapes are grown.

The hillsides with their gray or red, usually gravelly soil, produce lighter crops, but the wine made from them is of fine quality, while the valleys with their heavier soils yield splendid crops which make a good wine when properly handled.

These two counties, particularly Sonoma, are frequently visited by fogs, while it happens occasionally that, in the upper or narrower parts of the higher hills the thermometer rises to 110°F. in the shade.

Resistant vines (at that time almost all were field grafted) were planted many years ago when phylloxera first made its appearance, but owing to the use of the wrong resistant stocks the vineyards proved a failure. Besides having poor stocks to graft on, the latter were grafted below the surface of the ground, a thing that is done quite frequently to the present day, and the scion pushed out its own roots, which, of course, later succumbed to the attacks of the pest.

Now the main resistants planted are Rupestris St. George and Lenoir, with a few Riparia Gloire and some Riparia x Rupestris 3309 and Riparia x Rupestris 3306 in the younger vineyards. The St. George has not done well in calyey soils or where bedrock is present, while Riparia Gloire has done very well on some of the deep red, moist soils on the northern slopes of the hillsides. On certain very deep and rich valley lands the Lenoir has done remarkably well.

In Contar Costa county conditions for grapes and wines are similar to those of the two valleys mentioned.

Livermore.—In Livermore valley the Sauternes are made. This section, with its warm gravelly soil, is earlier than either of the small valleys mentioned. The varieties chiefly grown are Zinfandel, Grenach, Mataro, Carignan, Semillon, Sauvignon Vert, and a little Muscat de Bordelais. The last three are principally used for Sauterne. Here Rupestris St. George is largely used as a resistant.

Santa Clara.—The Santa Clara valley, once a county that produced 6,000,000 gallons of red and white dry wine, but which amount has been reduced by phylloxera and diseases to about a half million gallons. The wine made was of good quality. The varieties of grapes planted were as a whole about the same as those in the other dry-wine sections. However, the vineyards have not been planted as extensively as in Napa valley.

Mountain Grapes.—We still have a few picturesque sections where dry-wine vineyards are located. The Santa Cruz mountain section, with its beautiful redwood timber, and the country around Colfax, in Placer county, is particularly adapted for red wine.

The Future.—With the gradual disappearance of the direct plantings of vinifera, owing to the devastation of phylloxera, and the coming into almost universal use of resistant vines, it seems a natural consequence that more attention will be given to varieties of better quality, that at the same time bear sufficiently. This has already been done in the older valleys such as Napa and Sonoma.

Handling Grafted Walnuts.

[By Edwin Gower of Fowler, Fresno county, at the California Nurserymen's Convention.]

I am not going to tell you anything new on grafting black walnut trees. The method laid down by our Government and State authorities along this line are sound; where they are lacking, they fail to tell us how to take care of the tree after it is grafted; this is as essential as the former. I adopted the following method some years ago and had flattering results:

Take two folds of burlap, punch holes for the scions to pass through, making a hood inclosing and covering the entire stump, letting it extend down the sides a short distance; tie a string around the stump to hold it in place; by using this method the wax will remain in perfect condition. This is necessary more particularly in the San Joaquin and Sacramento valleys, where the sun gets warm at times and makes thim sizzle; the wax melts, exposes a portion of the stump, and runs down the crevices, destroying the tender tissues of the scion, and your efforts are all lost. I advise all grafters to use this method of protection on all trees above the ground. I think they will agree with me that it has many virtues.

After the scion is growing rapidly, cut the string; do not remove it. This allows the scion to grow without the string cutting it. If small trees, drive a stake down and tie the new growth. On old trees nail four sticks equal distances apart around the stump, letting the sticks extend four or five feet beyond the stump, wrap some string around these sticks; this acts as a net enclosing the growth of the scion, which grows phenomenally on black walnut. I have seen instances where they grow fifteen feet in one year. This net acts as a support and keeps the scion from either breaking or splitting off by the winds. It is sometimes advisable to nip off the end of the branches to check the growth. Cut them back vigorously for two or three years, until such time as they are well attached to the stump.

I have used the Smyrna or bark graft, also the cleft graft, but I prefer the former, as the scion seems to grow more rapidly and reach maturity sooner.

Varieties.—I have been experimenting for the last ten years, in a small way, on eight different varieties, all of which are standard; they have grown rapidly and when they have reached maturity have produced walnuts—some varieties, phenomenal crops. With these facts staring me in the face, I feel justified in saying that many varieties of walnuts will grow and do well in the San Joaquin valley and prove to be a profitable investment.

I had one Franquette tree that produced 200 pounds of walnuts, and only one per cent showed evidence of damage from heat. I had other early budding varieties that produced equally as well proportionally, of which about ten per cent showed evidence of damage by heat.

In view of the season just past, it appears to me that the walnut has shown as much resistant qualities as any other product of the San Joaquin valley.

Frosts and Walnuts.—Questions have been raised that the early budding varieties suffer from late frost in the spring. A frost that will damage a walnut will affect the peach, the grape and other fruit trees; in fact, the walnut has the advantage in that a matured walnut tree reaches 30 to 40 feet in height, and the late frost zone is from 1 to 10 feet high; ordinarily two-thirds of the tree escapes.

Soil suitable for walnuts should be at least five feet from hardpan, not impoverished sand, and not too strong with alkali. Land that will grow a thrifty black walnut tree is land that is suitable for walnuts, and I would not advise planting unless they were grafted black walnut roots.

How to Plant Walnuts in San Joaquin and Sacramento Valleys.—No prescribed plan has ever been published—pardon me, I am going to assume that duty on this occasion. It has been fully tried out and pronounced sound. First cut the tree back two feet from the ground, wax the cut, leave plenty of root, dig a hole according to the size of the tree; settle with water. Do not fail to properly shade the trunk, and water frequently during the summer months, and you will find they will grow as readily as peach trees.

The walnut, olive and fig are thin bark trees, and it is necessary to start them near the ground, so they will protect themselves from sunburn.

From what experience I have had I would advise, among French varieties or late-budding trees, the Franquette and Mayette; they are very hardy and produce a nut that is good standard value, white meat and a handsome shaped nut, suitable for export purposes.

The medium budding variety I have not tested out satisfactorily. The Eureka grows rapidly and seems to be hardy. The Placentia Perfection and Neff Prolific are among the early budding varieties; the latter I prefer; it has a heavy hull, less liable to damage from heat. Both produce well.

What the Walnut Tree Will Do.—The man who has a thrifty black walnut growing on his premises should graft it; the man that has none, should plant some already grafted. Why plant umbrella, elms, and other onramental trees which have no value except for shade and ornamental purposes, when the same energies will produce a walnut tree equally as ornamental and suitable for shade; timber valuable, produces a wholesome food, a substitute for meat, while from the green walnut you can make walnut pickles, and from the hull after the nuts are harvested you can extract what is known as English walnut juice from which is made walnut catsup. This juice is one of the principal properties of Lea & Perrins' Worcestershire sauce, and the juice has a commercial value of 36 cents per gallon wholesale in England. What more could we hope or expect of a tree?

PRUNING NEWLY PLANTED ALMOND TREES.

To the Editor: I find in the course of business that there are planters who complain of many of their trees failing to grow, although properly planted and cared for. Recently I have been making investigations and find that in many cases failure is certainly due to the pruning the trees receive after planting.

I always understood that the best way to prune a young peach tree or almond tree was to leave some of the lateral branches on them, cutting these back to two or three buds from the main stem. In many cases this plan is not followed out, but instead the tree is cut back to from 16 to 24 inches from the ground and no laterals left, no matter how large the tree was before planting. This is wrong, because many of the eyes on the main stem of the almond and peach tree are often blind.

Recently I had an opportunity of examining some such trees at Durham. The main stems had been trimmed to a whip and headed quite low. With the permission of the owner of one of the orchards examined, I pulled up some trees which had not started. Both root and top were as green as on the day when they were planted, but the trees had not made any growth, either of top or root, although there was certainly moisture enough to start them.

John Vallance.

Oakland, October 13, 1913.

PERSONALITY IN SQUASHES.

To the Editor: I have developed several new varieties of summer squash this summer, and I would like to know the food values of some of them. They look nice, taste nice, and no doubt some of them have a genuine food value. Would you be insulted if I named one of them Wickson?—Geo. Prentiss Kelley, Auburn.

There is not likely to be any considerable variation in the food values of squashes from cultivated seed. Delicate flavors are probably to subtle to be estimated by analysis. They must appeal to the palate. While all cultivated squashes probably have approximately similar food value, there might of course be one with a rather higher sugar content, but in order to determine that a great many analyses would have to be made to determine the normal content and have a point of departure for determining the relative standing of the exceptionally sweet one. We are not aware that such data is available and would advise you to depend in selection upon tenderness, taste, beauty of form, prolificness and other characteristics that can be readily determined by experience.

As to honoring us with the name of a squash, we of course cannot object, for it would be ungrateful not to accept such tribute. We have managed to live ten or fifteen years in comfort after distinction by Mr. Burbank in giving our name to a plum, and probably a good squash might carry us along in the public eye for another decade—without apprehending that it might be descriptive of out latter end.—Editor.]

RABBIT-PROOF FENCE.

To the Editor: Please tell me how high the woven wire should be for a rabbit-proof fence. Also what the spacing for the barbed wire at the top should be.—R. G., Fair Oaks.

[A good rabbit-proof fence can be built with chicken wire netting two feet wide, stapled to the inside of the posts, the bottom of it at the ground surface and barbed wire with bars 2½ inches apart run along just above the ground surface to prevent tunneling under, with another barbed wire stapled to the other side of the post just above the upper line of the fence to prevent jumping over. If you can get barbs 2½ inches apart, you can make a good rabbit fence by excluding the netting and running the wires about 3 inches apart until you come to 2 feet and 6 inches apart above that. Then keep a greyhound and a shot gun for the rabbits which may manage to get through in some way.—Editor.]

Pruning the Prune.

To the Editor: Writing further on the subject of pruning the prune, I would say that the unpruned tree nets us the greater profit for a term of years.

I have recently read about a test made with bred-up grain planted beside the common kinds. The season proved a favorable one, and the result was strange in that no one variety led the others to a degree worth recording. The favorable season along with good soil conditions were given the credit. A like test of two plots of prune orchard of equal size and on the same quality of soil, the one block of orchard pruned and the other unpruned, will show no difference in weight of prunes produced. The block of unpruned trees will show a gain to the amount of the pruning costs.

On the State property at Eldredge are orchards of many different fruits, including prunes. These orchards have been pruned properly from year to year, but for some reason the crops were not satisfactory.

Pruning did not make up on the crop end. These pruned prune trees I noticed at different times, and when they bore short crops the unpruned prune orchards in that vicinity were also quite shy in bearing.

I have a friend who owned an unpruned prune orchard in Sonoma county. His method of pruning was to prune just eough so he could cultivate thoroughly. The price of prunes dropped, and upon the advice of an expert pruner he had his orchard pruned properly. The seasons passed, but as his orchard never received the same style of pruning again, it would look as though proper pruning did not pay him.

The unpruned tree, in producing a bumper crop, will fall short in wood growth, and if a small crop is growing the wood growth is greater proportionally. The extra growth of new wood can be seen this season.

Knowing that these soil elements present one year in the crop and another in extra wood growth are of value only as we use them, why prune and burn or carry away this soil fertility in each year's prunings?

Pruning would be beneficial if we could control it, thereby causing the extra energy to develop for us a more perfect set of fruit buds than those found on the unpruned tree. This is not the case, however, for we soon have quantities of water sprouts as well as much brush in the tops of the pruned trees to deal with.

The wood growth is greater than on the unpruned tree. The unpruned orchard, having necessarily larger trees, makes a better appearance, and if placed on the market will sell more readily and bring a better figure.

We control cold with the fire-pot, strong winds with windbrakes, and as we study out the cure for other crop reducers we will find that we, by applying these cures, can greatly increase our crops, but no easy money need be looked for.

For any one location, a good five-year try-out will tell more than all that can be written as regards pruning the prune. The unpruned tree offers more chances for profit, hence it is a winner.

Napa, Cal. J. H. QUIEN.

ONE MORE MIDDLEMAN.

To the Editor: I have learned much about farming in the last three years from your valuable paper; in fact, I don't see how any farmer, or would-be farmer, can get along without it, and I would like to ask a few questions. While almost all papers, farming and others, are discussing and suggesting ways to lower the high cost of living, doing away with the middleman, and bringing the producer and consumer together, the question has come up in my mind, would it be a paying proposition to buy an auto delivery car, make daily trips, buying from the farmer and selling direct to the people at the free city markets, and otherwise? I don't mean could one get rich quick, but could one make four or five dollars a day above expenses?—K. W., Fair Oaks.

This is out of our line. Instead of doing away with middlemen you are proposing to make another one, and your transactions will come under commercial rates and conditions, not under agricultural. Probably success or failure would be largely due to personal suitability, viz.: whether you are a better buyer and seller than other peddlers with whom you will be in competition. You will also be in competition with growers who desire to sell their own stuff in a small way. Theoretically, it is the latter class which public markets are designed to assist.

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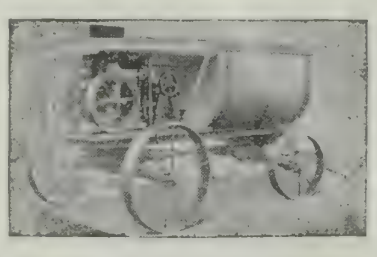
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A Beginner's Problems.

To the Editor: I am new to agricultural conditions in this State, and would very much appreciate some advice, either through the columns of your paper or otherwise. I understand that some ranchers sow grain in their alfalfa in the fall or winter to increase the amount of the first crop of hay and would like to know which grain is preferable for this purpose and what is the best time to sow it.

I tried this year raising potatoes on a rather sandy bottom soil that had had a good coat of stable manure. There were immense tops grown, but the potatoes amounted to nothing. Was this caused by mismanagement in growing, or is there some element lacking in the soil? I do not care to raise potatoes commercially, but only for family use.

I have started a family orchard of something like two acres, in which I wish to grow every variety of fruit that I can grow with any success. This orchard is on a rather heavy clay soil that does not take water very readily. I can grow crops between the rows at some profit and have plenty of water to do so, but will not the frequent irrigation necessary to do so harm the trees, since it will not penetrate very deep?—H. R. W., Los Molinos.

Barley is sometimes used to crowd out foxtail in the first crop of alfalfa. Who has done it and likes the results?

Potatoes directly after stable manure are apt to run to tops. It is better to manure for grain and follow with potatoes.

You will have to be careful not to swamp your trees with the water used on the intercrops. Keep the ground moist but not wet.

COST OF AN EARTH RESERVOIR

To the Editor: Replying to the enclosed clipping from the RURAL PRESS of October 18, 1913, I have in mind a dirt reservoir about the size required to hold the approximate capacity of a 3-inch pump operated by a 7½-hp. motor for 18 hours. This reservoir is built of dirt only, on a piece of land sloping about one foot in fifty. All the work of scraping was done in the midsummer months when the ground was hard, and on soil of an average depth of 25 feet; no clay or other substance used for puddling.

It is a success where a small supply of water only can be obtained, or where the cost of electricity per horsepower installed is very great. By careful attention, 60 acres of alfalfa can be given plenty of water. It is a great saver of cost of electricity where the graduated scale is in force, and is coming more in use every year. The approximate cost of this reservoir was $150, based upon paying a man, four mules, scraper, or plow, $6.50 per day of 8 hours. The capacity in gallons is 275.400.

The very best reservoir we know of where the soil is sandy or loamy is to cover the sides and bottoms with a thick coating of hot asphaltum, then cover the asphaltum with about a foot of dirt. The dirt prevents the water washing much of the oil away and also absorbs a large amount of oil. ROBERT H. MCMATH.

Dixon.

ROOT FOR PRUNES.

To the Editor: What is the best root for prunes on heavy land (nearly adobe)? The water plane in hard winters is very close to the top. I had thought of planting almonds, but my neighbors tell me that almonds will not do well on this kind of land. Hardpan is from 16 to 48 inches down and 6 to 36 inches thick. I intend to blast through the hardpan. Bedrock is blue clay 20 to 30 feet down. The water plane now is 16 feet down. What is the best kind of prune for this locality? I have just sold 24 tons of Malaga grapes from 1700 five-year-old vines, first crop only. I estimate 20 pounds more to each vine on second and third crop. This is the land I want to plant to prunes.—W. L. W., Yuba City.

The Myrobolan will be the best root for prunes on such soil; very much better than almonds. As a drying prune, the Petite Prune d'Agen, or ordinary French prune, is the variety to be advised in your situation. It may not be necessary to break up hardpan four feet down, but it will do no harm, and is quite likely to do good, even at that depth. Hardpan nearer the surface should be broken unless it is of a character that roots will go through easily. D. J. W.

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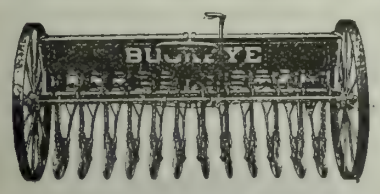

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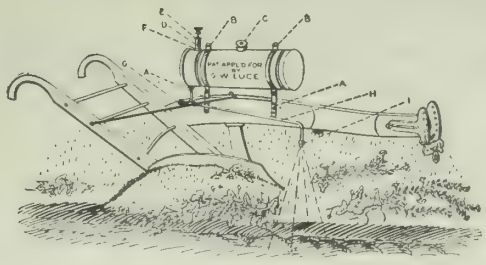
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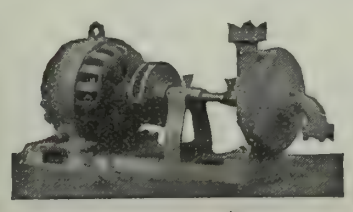
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Put Alfalfa in Right.

(Continued From Last Issue.)

The amount of fall given to checks laid off in this way across the face of a slope may be so slight that the checks are practically level from end to end and can therefore be entirely filled with water. This is a modification of strip checking in the direction of contour checking, using straight lines arbitrarily laid off across the slope instead of following the natural contours. In such a case, unless there is special need for the straight levees, as for planting trees, it will generally be found better to check in regular contours.

Another modification of strip checking that is favored by some, where the fall is rather heavy and where the straight levees are desired for tree planting, is to put in cross levees at intervals of 150 or 200 feet to hold back the water so that it will not run down the checks too rapidly to give good irrigation. The cross levees subdivide each check into a number of small rectangular checks, the effect being like that of square checking. If the upper end of each subdivision is scraped off and the earth placed at the lower end so as to make the subdivisions level lengthwise, or nearly so, the resemblance to square checking will be very close. The objection to this modification of strip checking is the same that applies to square checks—there is a good deal of earth to be moved and a very considerable amount of land devoted to levees. Even if the levees are made low and broad, as they should be, so that alfalfa can be grown over them and they will not impede mowing, still the yield of alfalfa on levees is seldom as heavy as on the level ground and there is consequently a loss of crop in having too much land in levees.

Therefore the use of cross checks to overcome a heavy fall in strip checks is only to be recommended in special cases, as, for instance, where the alfalfa has already been planted and it is not desired to plow it up and re-check the land. In that case, after the stand is a year old enough earth can be scraped off the surface to build the cross levees without injuring the stand, the work being done in the winter when the alfalfa is dormant. With care in handling the scraper an inch or more may easily be scraped off the surface without damaging the crowns of the plants to any appreciable extent, after the land has been disked to loosen the surface.

Another case in which cross levees may be used to advantage is when the lot is long and narrow and the fall is the long way of the lot. In some instances of this kind checks made across the lot will be too short, while contours may not be practicable on account of the difficulty of maintaining a satisfactory ditch from which to irrigate them. It becomes then a question of square checks or subdivided strip checks, and of the two the latter is generally to be preferred.

Constructing Strip Checks.

In proceeding to build strip checks, after laying off the lines as advised the first thing is to build the head ditch. In most cases this is a simple matter, the ditch being located along one boundary of the lot, though when the checks are run diagonally there may have to be a ditch also on part of a second side. If there is any difficulty about the ditch, due to inequality of the lot surface or to any other cause affecting its location, the best thing to do is to consult the superintendent of the water company, as he is the man best qualified to advise in such an emergency.

It is highly desirable to make the head ditch big enough in the beginning, as it costs much less to build a good ditch at the start than to enlarge later one that was made too small. For ordinary lots of ten to forty acres the head ditch should be at the least four feet wide on the bottom, and the bottom should be excavated at least one foot below the ground surface. The excavation is a point that beginners do not always understand. Since the water is to be used on the surface of the land, it looks at first sight as though a ditch built entirely on the surface would be all right. But the fact is that a ditch excavated below the surface is better than one built on the surface, and a foot of excavation is none too much, since the bottom of a ditch on an ordinary grade soon fills up with earth washed in.

The velocity of water flowing into and through a ditch is considerably influenced by the depth of the ditch. Therefore it is easier to get a large head of water into a ditch excavated below the level of the land, and moreover the water flows more rapidly through such a ditch than it does through one built entirely on top of the ground, the banks in both cases being the same height above the ground level. Now every experienced irrigator knows that the size of the head of water and the rapidity with which it flows through the head ditch and out on to the checks are matters of importance in irrigating alfalfa. The larger the head that the ditch will handle safely, the more quickly and therefore more cheaply can irrigation be done. To handle a large head of water with safety and with economy in distribution calls for a deep ditch with ample width and not too heavy a grade.

If the grade of the head ditch is heavy, it will be necessary to put in drops, that is, gates set across the ditch to hold back the water so that it will flow more slowly and will back up in the ditch high enough to flow out in sufficient volume on to the checks.

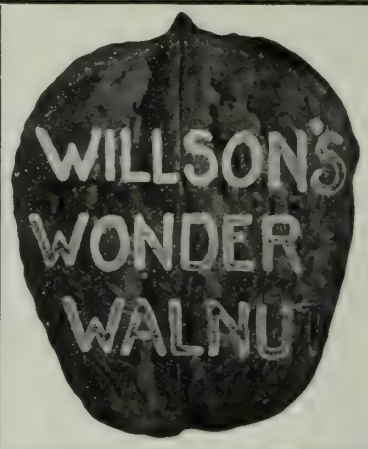
The banks of the head ditch should be at least two feet above the level of the land after they have settled, that is, three feet above the bottom of a ditch that is excavated a foot below the surface. They should be built of earth that is reasonably fine so that it will settle compactly. Big clods in ditch banks are a frequent cause of washouts, particularly if a number of them are thrown together in one spot. Well built banks at the start will save much laborious shovel work later. In irrigation the ditch is the key to the entire operation. Secure control of a large head of water in the field ditch goes a long way toward making irrigation easy; while too small a head ditch with weak, leaky banks is a heart-breaking and back-breaking handicap.

The actual difference in cost between a small, poor ditch and a well constructed one of ample size is very little, while the saving of labor in irrigating from a good ditch amounts to a good deal, to say nothing of the better watering of the land that is made possible by having a good head of water under complete control.

The head ditch being built, we can proceed to check up the land. The lines for the check levees were presumably laid off at the same time that the ditch was located. If not, the first thing to do is to locate these lines. As mentioned previously, strip checks should be laid off in such a manner that the average fall of the land from one end of the checks to the other is not over four inches in a hundred feet on medium loamy soil. On light, sandy soil that absorbs water very readily, the fall may be as much as six inches to the hundred feet, and the checks would preferably be somewhat narrower than the customary width.

Dimensions of Checks.

Fifty feet seems to have been adopted



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by common consent as the proper width for strip checks with ordinary fall. If the grade is heavier than one foot in three hundred, on the average, the checks may with advantage be made narrower, say forty feet or less in width, because when the fall is heavy the water does not spread out sideways so well as when the grade is light.

As to the length of strip checks, there is more diversity of opinion, but in general it may be said that long checks are more difficult to irrigate satisfactorily than shorter ones. Conversely, it is easier to get a complete and even irrigation on relatively short checks than on very long ones. Forty rods will be found a very convenient and satisfactory length for strip checks. This is not to say that good irrigation cannot be had on much longer checks, but in order to get good, uniform watering on the longer checks they must be exceptionally well leveled, or else an unusually large head of water must be used, with the possibility of considerable loss of water if it is not skillfully handled. On grades within the limits prescribed above, with ordinary leveling of the checks, we believe that strip checks in tne neighborhood of forty rods long, or less, will in the long run be found more satisfactory in the matter of irrigation than those which are much longer.

If the fall is quite light, well within the limit mentioned above, if extra care be taken in the leveling of the checks, and if a sufficiently large head of water can always be had when required, then checks up to 80 rods long may answer well enough, but in no case would the writer make them any longer.

STRAIGHT LEVEES DESIRABLE.

In laying off the lines for the check levees, care should be taken to get them all the same distance apart, perfectly straight throughout their entire length, and consequently exactly parallel. Perfectly straight levees add much to the appearance of the alfalfa field and in some degree make it easier to irrigate evenly. Of course, when trees are to be planted on the levees, it is absolutely essential to have them straight, so that the trees will line up properly. With a little care in measuring there is no trouble in getting straight levees.

CONSTRUCTING THE LEVEES.

When the lines have been accurately staked out, the next thing is to loosen up the surface of the ground, either by disking or plowing according to whether it has been decided to plow before or after checking. This point will be considered fully later on in these columns, and it is therefore not necessary to go over it here. If plowing is to be done after the checking, the land must be disked to provide loose earth for building the levees.

Now make a foundation for each levee by plowing two furrows on each side of the levee line, throwing the earth toward the line from either side. The effect of this is to furnish a good connection between the loose earth that is to form the levee and the ground underneath, thus making the levee stronger, more stable and less liable to washing out. When the plowing of the field is not to be done until after checking, it is a good thing to make this plowed foundation the entire width of the levee, and to plow it deeply, thus insuring the thorough breaking of the soil under the levees which will not be reached by the subsequent plowing. For levees of ordinary width, 8 feet wide, this would mean four 12-inch furrows on each side of the line, instead of two.

(To be continued.)

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AGRICULTURAL REVIEW.

With the Fruit Men.

Box and crate manufacturers, fruit growers and distributers from the Pacific Coast States recently met in Portland, considering plans for the standardization of fruit shipped.

Earle Mills, horticultural commissioner of Butte county, is making a systematic attack on the olive knot and black scale in the county.

Fruit shipments are holding up very well with those of last year, by October 25, amounting to 12,235½ cars, against 12,417¾ cars to the same date a year before.

A large amount of land in Barkers Bench above Banning, Riverside county, has been prepared for irrigation by the Consolidated Reservoir Co., and will be planted to apples and cherries.

A report from Fair Oaks states that $200 has been offered for olives of the best quality anu $35 to $40 per ton for oranges.

John Moreland, of Gridley, has a block of six-year-old walnut trees that bore from $2.50 to $4.50 worth of nuts this year. One tree produced 175 pounds.

K. B. Norswing, of Orange county, is attempting to build up a parcel post trade in walnuts.

Carl Crystal, of Sebastopol, has had such success with strawberries that he will greatly increase his acreage for the coming season.

Heavy prune planting in Colusa county is being planned owing to great results from bearing orchards.

The Ehmann Olive Co. irrigated its 95-acre grove in the Lodi section this year and got a crop almost double that of other years.

Tuolumne apple growers have begun shipments and state that sales have been very easy and prices high.

Citrus Notes.

A recent estimate of the citrus fruits during the coming season are: From north of the Tehachapi, 4500 cars, mostly navels; from southern California, about 4000 cars of lemons and 8000 cars of valencias, and enough navels to bring the grand total up to 38,000 to 40,000 cars, subject to climatic conditions.

The annual meeting of the Queen Colony Fruit Exchange, Corona, was held recently and officers elected. Financially, conditions have been quite satisfactory.

A large amount of orchard heating will be done in the Whittier district this year.

The Tulare County Citrus Fair will be held a week earlier than was expected, from December 4 to 13.

Hot and dry weather in Sicily has materially injured the quality of lemons there, according to a consular report, though the crop will be large.

Warm weather in Tulare county has prevented as rapid coloring of oranges as was looked for.

Field Crops.

J. B. Hickman, horticultural commissioner of Monterey, reports a remarkable increase in the alfalfa acreage of his county, making an estimate of 20,000 acres.

The California Cactus Co. will plant out a good acreage to cactus on the Villa Verona tract south of Oroville. The ranch will be irrigated by pumping.

An account from Sonoma county states that contracts of 17 cents have been offered for hops next year. The crop along the Russian river this year is said to make 16,577 bales.

A large amount of land used for sugar beets in the Sacramento valley will be planted to beans in 1914, owing to the closing down of factories.

The bean crop in Sutter and nearby counties is not over 60% of normal this season.

It is reported that the cotton-boll weevil has been found in Arizona on a native plant five miles from a cotton plantation, making the risk great of spreading to Arizona cottonfields, thence to Imperial county in California.

About 30 carloads of beans will be shipped from Ceres this fall.

Lovelock, Nevada, beets are running about 17% sugar this year. Beets from the various Nevada valleys are reported to be showing a better test recently than earlier in the season.

George Shima, the delta planter, is stated to have put into cold storage for the late market 15,000 boxes of the best quality onions.

J. A. Lloyd, of Orosi, got at the rate of six tons of fodder to the acre and possibly 1½ tons of seed, according to newspaper accounts, from an experimental planting of shallu, or Egyptian wheat as it is incorrectly called.

Rice growers of the upper Sacramento are reported to be having much trouble with ducks this year. The total rice yield will be about 150,000 sacks.

The cotton yield in Imperial county is exceptionally large and good this year.

A large planting of asparagus is said to be planned by the Central California Canneries on 4000 acres of reclaimed marsh land at Novato Meadows, Marin county. Other crops will also be grown. The land is now being broken up for planting.

A larger acreage to sugar beets than ever before will be put out in the Santa Ynez valley, Santa Barbara county, this fall.

Negotiations have been at their height in Imperial county recently regarding a suitable basis for the marketing of the cantaloupe crop for the coming year.

State Grange Convention.

At the annual meeting of the State Grange in San Jose last week, the following officers were elected: Worthy Master, Joseph Holmes, Sacramento; overseer, Charles F. Collins, Dinuba; lecturer, Mrs. W. B. Hill, Eldridge; steward, George Schlmeyer, Elk Grove; assistant steward, Ray Church, Petaluma; chaplain, Ella M. Dow, Oakland; treasurer, M. Farrell, Mountain View; secretary, Nellie V. Hunt; Ceres, Caroline Emory; Pomona, Edna Hartley; Flora, Jennie Sanders; lady assistant secretary, Ora G. Gould; organist, Alice Winans; executive, S. L. Stice; gatekeeper, Lee Dudgeon.

Among the resultions adopted was one urging the repeal of the Roseberry act. The Grange is opposed to any legislation imposing additional burdens upon farmers. Investigations of farm credits and other important matters were decided upon.

Irrigation Matters.

Prof. J. G. Cross, of Monrovia, has installed a new method of overhead irrigation in his orange grove. By the system the water is applied over the trees in the usual way, but when the trees are in blossom irrigation can be practiced without the water touching the leaves.

The State Reclamation Board decided to permit the work of the Fresno Canal & Irrigation Co. to go ahead in the control of the waters of the Kings river. The Delta Association claimed that this work would endanger reclaimed lands of the delta country when floods occurred.

The Island Reclamation District No. 776 of the Tulare lake district, Kings county, is annexing many thousands of acres adjoining the old district.

Plans for the storing and diverting of waters of Coyote creek near Gilroy for

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MISCELLANEOUS

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irrigation of parts of the Santa Clara valley near Campbell and Cupertino are rapidly advancing.

Secretary Lane is attempting to have small demonstration farms located on all of the United States irrigation projects.

In the government borings in Iron canyon, at the head of the Sacramento valley, to obtain data on the foundation for the great storage dam that will be erected if the project is carried through, an artesian belt has been found.

Plans are being made for the formation of an extensive district in Calaveras and San Joaquin counties with the idea of impounding the waters of the Calaveras river to prevent overflow and to provide water for irrigating.

Grapes and Grape Products.

The Secretary of Agriculture is to hold a meeting November 5 to consider the proposition of permitting Mississippi Valley "wines" to which sugar has been added for fermentation and which were otherwise manufactured differently from a straight grape basis, to be termed "wines" without some modifying word. This is a part of the recent big tariff trouble where California wines were threatened with a big tax.

A report from Cloverdale states that 20 cents per gallon has been offered for wine.

It has been found that much more damage was done to table grapes in Fresno by the frosts of October 6 and 7 than was then thought, 25% of the Emperor crop being spoiled.

A car of table grapes from Lodi brought $1670 in Boston recently.

Ashley & Brown, of Lodi, have shipped several cars of wine grapes East this season. They were shipped under ventilation and arrived in good shape.

About two-thirds of the 1913 raisin crop has been delivered by growers already, some sections being about cleaned up. The raisins are going to the trade nicely and another small advance in fancy seeded stock was recently made. The Associated Raisin Co. has had to lease two new warehouses at Selma to attend to caring for the raisins.

Detailed figures prepared at Fresno show that from October 1, 1911, to September 30, 1912, 75,106 tons of raisins were shipped, while in a similar period the following year 100,561 tons of raisins were shipped, showing a greatly increased consumption of this food.

A large winery is being planned for Lakeport, Lake county.

Miscellaneous.

A number of Farmers' Institutes are planned for northern California during the next few weeks. Among them are: Kerman, Nov. 6 and 7; Williams, Nov. 11 and 12; Arbuckle, Nov. 12 and 13; and Modesto, Nov. 24 and 25.

A county convention of Farmers' Unions of Santa Clara was held last week in San Jose, 16 locals sending delegates, besides a newly organized local at Gilroy.

Los Molinos folks are working to have a farm adviser appointed for Tehama county.

The last of the 145 tons of Kings county honey produced this season was recently shipped.

It is planned to strip the large cork tree at Rancho Chico as a demonstration of the possibilities of cork production here. The tree has bark three inches thick in spots which should make excellent cork.

The Tisdale ranch in west Sutter county is to be subdivided into 40-acre tracts soon. The land will be irrigated by pumping from the river.

A free market will be established soon at Pasadena. One is also planned for Madera.

A large ostrich and flemish giant hare It will be irrigated from wells, and alfalfa ranch will be started at Redlands soon. and cactus grown.

Hatfield, the "Rain Maker," has succeeded in betting nothing against $3,000 that there will be 10 inches of rain along the West Side near Newman this season.

The Kern Meadows Land & Water Co. is planning to subdivide 15,000 acres of land north of Wasco, Kern county.

The Office of Public Roads of the U. S. Department of Agriculture is co-operating with many States and counties in improving roads.

Three sales of land in the Oakdale district have recently been made, each for 1000 acres and upward, the buyers being Strum Bros. of Oakland, Samuel Weisman of San Francisco, and Chapman & Mettler of Los Angeles. The land will be subdivided.

William Devinney, of Old Newport, Orange county, has sold his 190-acre ranch, which is planted to sugar beets, to a Los Angeles firm.

Fort Bragg is planning an agricultural fair.

KILLING SALT GRASS.

To the Editor: I notice that in reply to an inquiry from Volta the RURAL PRESS states, in effect, that to get rid of salt grass it is necessary first to get rid of the alkali in the soil. I have had a number of years' experience with salt grass on the east side of the river here, and I find it on all kinds of soils; on alkali soil and on soil that it would take a chemical examination to find the alkali; and I have seen it killed on all kinds of places. The most successful method has been to plow rather light, just under the roots, then harrow thoroughly, preferably with a spring-tooth, and rake up the roots with a hayrake and burn or cart away; this will have to be repeated, in most cases, several times, and should be done in the heat of the summer when the water can be kept off the land. The salt grass root is very retentive of life, but the sun will kill it if the entire root is exposed. The root is long and if any part of it is buried where there is the least moisture, it will grow. If the grass is not all killed the first season, sow grain in the fall to hold it in check during the winter, and as soon as the hay is off, go at it again. If the soil is kept dry and the roots removed or thoroughly exposed to the heat of the sun, you will kill the salt grass. W. A. DARLING.

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Making a Good Saddle Horse.

[By the Associate Editor.]

The automobile has hit the buggy-horse a hard lick, and the saddle horse as a means of recreation still harder. Yet it remains a fact that there is a style to a good saddle horse, a pleasure in having a fine living creature, that no machine can rival and an exercise in riding that always will develop a demand for a good riding horse. It is an interesting fact that the riding horse is returning to popularity, and the experience of Arthur H. Brinton, of Woodland, illustrates this tendency.

Mr. Brinton by profession is a trainer of saddle and driving horses and has been all his life. He came to California eight years ago in the employment of one of the large estates, and seven years ago purchased a 15-acre farm a mile or so out of Woodland to work for himself. As a side issue and to give something to fall back upon when the demand for saddle horses fell off, as he expected it would with the increasing use of the automobile, he got a few pure-bred Jerseys and Berkshire hogs. Recently, however, the saddle horse has been coming in again, and he is finding it necessary to put all of his time with the horses.

One of the main reasons for the change is the increasing number of district fairs in California and the greater attention given at the State Fair to gaited saddle horses, which renews the interest of horse lovers in this class of horse activity.

Demands on Gaited Horses.—It will be understood that the market for gaited saddle horses is with wealthy persons, perhaps in the city or suburbs, and the class of horse is different from what would be needed simply to ride around a ranch. A horse must have a handsome conformation, good style and action, and be trained to go into any gait required at once.

There are five gaits for the trained saddle horse, three of which are natural gaits, the walk, trot, and the canter, or lope, as it is often termed on Western ranches. Besides this, there is the fox trot and the rack, which with many horses are natural. The fox trot is more of a walk than a trot, and it is a very good gait for a horse that is to cover a long distance. Take a horse that wants to move along and hold him to a walk, and he will try to hurry up a bit and get into a kind of a shuffle, covering the ground say half as fast again as in a real walk, or even faster, yet keep up the same kind of a leg movement. Or take a horse that wants to walk and urge him up so that he nearly makes up his mind to jog along but don't quite get to it, and he reaches just the same pace. This is an easy gait on a horse, easy on the rider, and is very good for covering long distances.

The rack, or singlefoot, is harder to obtain, although some horses take to it naturally. If not, a horse can be made to get into the pace by making him trot, but holding him back so that he cannot quite do so. Or pacing hobbles can be put on a horse, the rider holding him back so that he cannot quite pace. That is the way it is done with the hardest animals to get into the gait. This is one of the easiest gaits there is to ride.

In regard to this gait, it is an interesting fact that the horses that rack in the finest style are those that take to it the slowest—horses that have to make an effort to rack properly. The reason for this is simple. The horse that has the gait naturally, or soon learns it, goes along with little trouble, wastes no effort, and lifts his feet no more than he has to. The horse that finds the rack difficult naturally puts more effort into it, so shows more style; his mind is on what he is doing, he lifts his feet higher, steps farther, and shows more spirit in his work. The other goes along so easily that he thinks nothing of it.

Signals.—The well trained horse must know at once what gait his rider wants and go into it at once. There are, of course, methods of indicating to the horse what is desired, and every horse should keep up the gait on receiving the signal until he is put out of it. Most trainers use about the same signals, although there are slight differences besides the different ways that different riders will do the same thing, and the buyer of a trained horse should ride him enough under the direction of the owner to see that the animal is not confused by slightly changed methods.

At the start a horse is put into a walk and changed into another gait from that, although after he has struck another gait he should change to any other on receiving the signal.

The walk is done with a loose rein, and a horse should drop into a walk on being given his head. To secure a trot, the regular method is to give a slight pull on the mane. This is a natural signal, as a horse in trotting slightly lowers his head, and the pull naturally makes his head go into the proper position.

The change to a rack is by a certain pull on the bit. A fox trot is called for by a pressure with the calves, and a canter is indicated by a snap of the finger. These are the signals Mr. Brinton uses. Other trainers may use somewhat different signals.

No horse, of course, could be expected to go along on one gait very long without a change for a little rest, but the better trained a horse is the quicker he will change his gait on signal and the longer he will keep it up without further attention from his rider. The proposition is to always give the same signal to a horse on putting him into a gait until finally it will be second nature to him to do just what he is told. Most anyone can make an ordinary horse walk, trot, fox trot, rack or canter, but few people can do so without waste of time and effort or make the horse stay with a gait, especially an acquired one, if the horse feels indisposed to do so and does not realize that he should keep it up.

Driving and Riding.—Under present conditions more is required of a gaited horse than once was, at least is required of some horses. It used to be that a riding horse was a riding horse and a driving horse a driving horse; but now when automobiles are so convenient and a family wishes to get all possible out of a horse, they may want one that is good for either saddle or buggy, and a horse must give full satisfaction in both harness and saddle. He must have all the gaits described and yet never break into a riding gait when in harness. This requirement is recognized in the classifications at the State Fair and other horse shows, where there is one competition for combination horses.

It does not thus matter especially what breeding a horse may be, he may be taught the gaits with profit, provided he has the conformation, style and quality desired. As a matter of fact, some of the best gaited saddle horses are standard bred, developed solely for harness work.

Gold Eagle, Mr. Brinton's favorite horse, is thus a standard bred horse, and shows his adaptability for the work by taking two firsts, a second and a third at the last State Fair. He was first in five gaited geldings, first in riding horse for ladies under 16, being ridden by Mr. Brinton's daughter; second as combination five-gaited horse (saddle and harness), and third in the three-gaited class.

Referring back to the rack, this horse illustrates the point that the horses with most style in the rack are hardest to break to it. Gold Eagle was a driving horse, and it was a struggle to him to learn the rack, but as a result he steps high and far and with extreme style and spirit, going along at a rapid pace at the same time. Making an effort to go at this gait, he very naturally cannot keep it up as long as a horse taking to it easily.

Besides the gaits named, there are a lot of fancy steps and tricks some trainers teach that are very interesting and of great value in the show ring but no good in the park or for practical work, and the big demand is for horses that can go the regular gaits in good style, also holding their own in the harness when desired, though this is not required of all. No horse under five years ought to be put to regular five-gaited saddle duty, but a well trained horse of five years or over will double in value when he knows his paces and will go into them. It is the fairs and horse shows that are largely responsible for the return of such horses to popularity.

The increased demand has caused Mr. Brinton to curtail his activities in other lines, and his 15-acre farm has been quite a pure-bred establishment. The only stock on the place not pure-bred have been the horses, which could or could not be pure-bred, provided they came up to specifications. He has a small bunch of Jerseys derived from the stock of H. N. Locke and George Smith, also several good Berkshire sows and a number of pigs, a flock of White Wyandottes and an Airedale bitch and pups. The chickens and the dog will stay, but the others have to go to give time to horse training.

THE CALIFORNIA DAIRY INDUSTRY.

(*Continued From Page 409.*)

quantities as the State's development progresses, it would seem that dairying is only just beginning to assume a portion of its real importance.

Like all growing industries, the advanced ideas given the subject onsiderable study seem to be common practice at the present time. This leads to the belief that future dairy standards will be more or less influenced by the progressive methods in use today. If this is true, the proper thing for one entering the dairy business with a view of obtaining the largest net returns in the future should be to endeavor to lay the foundation as nearly along those lines as possible; otherwise a general reconstruction will be necessary every few years.

Where Solid Foundation Aids.—Those who have given the subject considerable study seem to be agreed that the main factor upon which to build a successful undertaking lies chiefly in the health and producing qualities of the cows; therefore, they are first securing animals free of tuberculosis, or other contagious diseases, which practice is followed by a knowledge of their producing powers. Not only are both of these factors necessary for the highest ideals of dairying, but they also seem to be economic reasons; for to all appearances the law will eventually require absolutely healthy cattle, and the increasing value of alfalfa land will make the poor producing cow a liability rather than an asset. Many experiences indicate that the production and health are of more importance than the breed, for any breed will make satisfactory returns if bred along the above lines.

With high producing and healthy cows, the next step of importance is feeding, and here, also, indications for the future point to changes in the old routine, for the feeding of alfalfa has demonstrated two things: first, that for big yields rotation of crops must be practiced, and second, for high milk yields some feed must be used in connection with alfalfa so that the ration may become more evenly balanced. Fortunately, both of these are well taken care of with the silo, for corn makes an ideal rotation crop and serves an excellent addition to the alfalfa ration.

There are few industries that are more at the mercy of State and city regulations than the dairy industry, for with the increasing popularity of pure foods, radical changes are being made which compel the dairyman to maintain more sanitary plants. This not only necessitates extra precautions in handling the milk, but also requires well ventilated buildings with ample drainage, and, in many cases, especial dairy equipment. While these regulations may sometimes seem unjust, they should undoubtedly be given careful consideration, for there is a growing tendency in that direction even by dairymen who wish to put the industry upon a high living level.

Are Illustrations Practical?—With the apparent needs well defined, it might be well to find out whether they are practical, or whether, as many still maintain, only theoretical frills and fancies. It is true that the practical illustrations found are generally in the minority, still they are proving so satisfactory that many of them are being seriously considered for general use. For instance, the law requiring certified dairies to test for tuberculosis was at one time considered a fad, originated by hygienic cranks; yet it has become a recognized factor in preventing a widespread infection of that disease. Progressive dairymen, realizing its merits, are taking time by the forelock and cleaning up their herds so that they may be prepared to meet State-wide laws on the subject should laws be enacted.

The need of better bred stock is best illustrated by experiences in the cow-testing association,

where it has almost without exception been found that the best producers are from well-bred sires. Another point brought out by these associations which will have a direct bearing on the plan above outlined is that a large percentage of the cows entered were found to be "eating their heads off," as one man in Tulare county remarked. This seems to indicate that large numbers of cows are not profitable to their owners, even though land values have not reached their ultimate high-water mark, and that milk weighing and testing will always be of prime importance.

The leaders in dairy methods and equipment are usually the certified dairies, which are increasing in numbers as fast as city consumers can be educated to the higher value and price of their product.

To the present-day dairyman whose production is sold as butter-fat, many of the extremes practiced on such places may seem ridiculous, and probably will not be universally adopted for a long time, yet the more important features are admittedly good, and, at least, they set standards for the ordinary dairymen to aspire to, either in part or as a whole.

Slower Growth Practical.—Oftentimes it is possible, when one has a definite plan to work toward, to eventually build, step by step, an ideal plant, even though at first it may seem impossible. With that view in mind, many lessons might be profitably taken from the Alfarata dairy, in Merced county; for while the plant has been built with the intention of producing a certified product, many of the features may easily be modified to become practical for any dairyman.

As an example, in one of the illustrations will be noted the concrete silo and exterior of the milking barn, and the convenience of one to the other. The silo has a capacity of 185 tons of ensilage and also affords a 10,000-gallon water-supply, as that section, seen in the picture, above the opening is used for this purpose. The cost of this silo was considerably more than a wooden one would have been, yet it is much more lasting and substantial and demonstrates that the silo is being recognized as a necessary part of the dairy equipment, even though the expense is oftentimes considered excessive.

The electric wires and motor shown also illustrate that advanced methods are transforming the power factor on farms, that kind of power in this case being used for all the mechanical work as well as furnishing light for the buildings.

As one user of electric service remarked, "Electric juice on the farm has created a new delight in living, as push-buttons and switches beat pump handles all to blazes."

Fortunately, many of the modern equipments are big labor savers as well as more sanitary, the feed carrier shown answering both purposes admirably. In many instances they are also used for manure carriers; but while tracks were built for that purpose, here all solid as well as liquid matter is flushed through a four-inch sewer pipe to the cesspool, where an electrically driven pump forces it out into the irrigating ditches. The barn, which is 35 feet 10 inches wide and 60 feet long, is built in such a manner that it may be added to when the need is felt, there being at present accommodations for 30 cows. The interior view shows one of the most approved styles of light and ventilation, a feature which is yearly increasing in popularity, also the cement floors, mangers and gutters. A common phrase heard around certified plants is that "the floor is clean enough to eat from," and while most people would have some trouble in acquiring such habits, they are kept remarkably clean by having an abundance of water which is never used sparingly. Water under pressure, and cement have greatly simplified sanitation in dairies of all classes. As cement and water become factors in milkhouses and barns, they also enter into the scheme of modern irrigation on dairy ranches—well pits, reservoirs, and irrigation pipes all being constructed of cement on this place.

Next to cleanliness, cement becomes an important factor, because of its ultimate economy, and this also applies to the use of steel stanchions; for while the first cost may seem excessive, in the end they eventually prove the cheaper.

If there were no other evidences of the industry being substantial, the fact that such permanent equipment is being installed by large numbers of practical dairymen would seem to be evidence that it is considered a thoroughly safe undertaking by those already in the business, who are best fitted to know.

As before pointed out, the whole question of more and better dairying does not lie in the hands of any individual dreamer, but rather upon sound economic facts, and if alfalfa deserves the name of "king" it might be appropriate to term the dairy cow "queen," which position she will doubtless honor if given half a chance.

How to Feed Hogs Beet Pulp.

To the Editor: I note with pleasure your statement in the issue of October 18, 1913, of the Pacific Rural Press, that beet pulp had been successfully used as hog feed in Utah. I have just been informed by Mr. Cohn, superintendent, and his brother, foreman, of the Alvarado Dairy, at Alvarado, that while beet pulp as it comes from the sugar mill is excellent feed for sheep and cattle, especially for fattening, it is poison for hogs: "it burns them out."

They referred me to F. Weigman, of Alvarado, as one who lost large sums of money in the experiment. I trust that they are wrong and you right, as I was about to adopt it as a rough feed when I heard of the losses suffered by Mr. Weigman. Can you advise further in the matter?—Subscriber, Ellisworth.

We should be glad to learn of any experiences of our readers with beet pulp as feed for hogs or dairy cattle, either good or bad; for, as was said in the issue you refer to, there has been very little done for public record. However, we believe that the explanation of trouble in one case and success in another is not hard to find. Fresh beet pulp in large amounts is a very stimulating or forcing feed. It will send a cow or a steer ahead with great rapidity for a while, but the digestive organs cannot stand the pace, and before very long the animal will be "burnt out," just as the hogs were that you speak of. That is the case only when large quantities are fed. Smaller quantities have the same stimulating effect, though in more moderate degree, while alfalfa hay or other dry food fed at the same time prevents any harm whatever from developing. Broken-down cows, when fed large quantities of beet pulp, as at Alvarado, where a factory is close at hand to supply immense amounts of this feed at slight cost, will improve greatly for a while and give large quantities of milk, but after a few months have to be sold to the butcher. Steers also make rapid gains and finish up well, but this should be used in large amounts only for finishing, and steers would "burn out", too, with long-continued heavy feeding. Where the stock feeder is many miles distant from the beet factory and has to pay more for the pulp than the stockman right at the mill, he naturally feeds smaller amounts and lots of alfalfa with it. That would be cheaper and better than a straight beet-pulp ration and does no injury to the animals, no matter how long fed. Miller & Lux, the most extensive users of beet pulp for fattening steers in California, feed alfalfa hay extensively with the pulp.

Hogs have a digestive system even less capable of disposing of such forcing feeds, and would be more susceptible to injury than cattle by being fed excessive quantities of beet pulp. They require a larger proportion of concentrated food. You will notice in the experiments quoted in the issue of October 18 that the hogs were given a good quantity of middlings with the beet pulp. The ordinary man would do just this, perhaps substituting alfalfa, about the cheapest and best food possible to go with beet pulp, or other dry feed.

It should be fully understood that overfeeding is the only real "poisonous" thing about beet pulp, although fresh pulp frequently contains rather large amounts of lime that may do injury to animals when a great deal is consumed. It will not do injury when fed in moderate amounts, and dried beet pulp would be better, as this lime is mostly removed. The feeder away from the factory would not feed enough beet pulp to do anything else but good, and could feed it to any animals indefinitely.

As we have said, we have very few records of experiences with hogs and beet pulp, and would be glad to hear of results, but that is the theory of the matter. We think that beet pulp, dried or fresh, is one of the best foods possible in California to go with alfalfa, and this has been frequently demonstrated.

REASONS FOR A LIVESTOCK COMMISSIONER.

[By the Associate Editor.]

In our news columns recently mention was made of stockmen of Yolo county favoring the appointment of a livestock commissioner to give his time to the best development of the livestock industry of the county. The supervisors have made no decision as yet, but the matter will soon be decided one way or the other. The idea is excellent, and no county has livestock interests that would fit in better with the plan than Yolo county, Woodland being a center for pure-bred beef and dairy cattle, sheep and hogs.

The following is a brief summary of several reasons for the appointment of such a commissioner and his duties.

He could be a great help in giving instructions in economical and beneficial feeding methods, and in fact with other lines of care of grade stock.

He should be able to be of assistance to pure-bred breeders in the proper fitting of animals for the various stock fairs and in getting breeders to show fine stock in the best possible manner who otherwise would not show, thus developing an excellent reputation for the county among stockmen.

He would be required to keep records of pure-bred animals for sale so that buyers could find out just where to go to get what they wanted. It would be a great convenience to customers and a great help to the breeders.

Such a commissioner could be of great assistance in the purchase of pure-bred stock for stockmen in the county, giving ideas about pedigree, conformation, merit and price to stockmen who otherwise would not buy pure-bred animals.

He could also be of much assistance in the buying of high-class grade stock to newcomers, who otherwise might buy the first animals they came across, establishing scrub herds instead of high-class grade herds, or ultimately even pure-bred herds through the purchase of a few good pure-bred females.

He could see that pure-bred stock was registered and see that registered animals were up to breed requirements. The commissioner should also be well up on stock breeding to give advice on the breeding of animals to give the best results.

Many dairymen and hog men have fine bulls or boars which they are unable to use on account of inbreeding after a couple of years, and yet are unable to sell at a fair price. They thus frequently buy cheaper grade sires, to the detriment of the industry. The commissioner could help such dairy and hog men to trade sires, which would raise the standard of grade stock in the county and make good pure-bred sires the regular thing on all ranches. The commissioner could be of service in the establishments of stallion companies, seeing that the basis of organization was correct and also that the right kind of a stallion was purchased at the right price.

Similarly, he could help in the organization of other breeding companies with sires of other sorts. These can be the greatest help possible to the small stockmen who do not feel justified in buying pure-bred sires for their own use and of their own accord will not get together into companies formed like stallion companies.

In brief, such an official would have the opportunity to greatly improve the breeding of stock, grade and pure-bred, in the county, to develop a market for the pure-bred men and to permit grade stockmen to get better sires at less expense possibly than they would go to otherwise. He could give assistance in stock management and in

farm management connected with stock and could do in stock circles everything that county farm advisers could do for general farm practice. The establishment of such an officer in Yolo would not only be an excellent thing, it seems, for the county, but it would provide a guide to other counties for the same end.

Collection of Colic Cures.

An English veterinarian gives the following wide range of colic remedies, some of which are likely to be on hand in every house or stable:

See that a horse does not start work on a full stomach, and do not give big feeds of any sort, especially bulky food during work. Small feeds on the road, and the main bulk of the food, particularly hay, after work, is the best rule, but even then do not give feed too soon after a hard day's work—wait until rest has restored the animal's digestive powers to the normal. Of colic remedies such as can usually be obtained, I would recommend the following:

1. Baking Soda—Give 2 oz. (4 tablespoonfuls) in a pint of water.

2. Powdered Ginger—Give 2 tablespoonfuls in a pint of warm water.

3. Ground Black Pepper—Give 1 tablespoonful, shaken up, in a cup of oil.

4. Turpentine—Give 2 oz. (4 tablespoonfuls) in a pint of linseed oil. Shake well when drenching.

5. Powdered charcoal in any quantity is useful in flatulent colic. This can be given in thin gruel.

6. Whisky, in half-pint doses well diluted with water, combined with two tablespoonfuls of powdered ginger, yields good results.

Of the remedies mentioned, Nos. 1, 2, 3, 5 and 6 can be repeated, if necessary, several times at intervals of an hour. No. 4 can be repeated once after four hours' interval. If linseed oil is not available, the turpentine can be given well shaken in a quart of milk.

Rectal injection of warm, soapy water, given with a large syringe through a piece of rubber hose pipe, 4 to 5 feet long, is good treatment. Six quarts should be given at a time, and repeated in an hour if required. The end of the pipe should be smooth, and it should be oiled before introducing it into the bowel. The whole length of the pipe should, if possible, be inserted, but no force must be employed to do this.

In flatulent colic, tobacco water is sometimes used as an enema with advantage. To make this, take 8 or 10 ounces of twist tobacco, put into a quart of boiling water, strain, and when about the heat of freshly drawn milk, give as an enema.

Mustard made into a thin paste and well rubbed on the outside of the abdomen is beneficial. Blankets wrung out of very hot water and placed over the abdomen, with a dry blanket outside to retain the heat, are also good.

It is a good plan to keep the horse walking about when violently attacked with colic, as it prevents him injuring himself when lying down and struggling.

HUMUS APPEALS TO A MULE.

Prof. A. C. Whitten gives the Texas Farm and Ranch this suggestive bit on humus:

Humus is "decayed matter," either vegetable or animal, or both, and it acts upon the soil on the same principle as the wick in an oil lamp. Its action in the soil is to enable the rain to almost instantly enter the soil, instead of running off, as many have noticed on land almost totally without this decayed substance. Then after the water enters the soil where humus abounds, it starts circulating among and between the small particles of soil, becoming changed into a heavy, hydrated gas, which dissolves the chemical plant food which is stored in the soil, but which, without humus being mixed therein, is packed tight by the rain which may be supplied in prodigal abundance and yet this plant food remains locked up and, like Tantelus of old, the little plant dwarfs or dies with food in plenty almost in reach. Then the humus opens and loosens up the soil so that the small roots may penetrate the soil and send out thousands of small capillary rootlets, each a foraging squad in search of food for the parent plant. And the saving in resistance to the plow and cultivator will enable man to do so much more work and do it better, that from this fact alone it is a paying investment.

And this reminds me of a farmer near Abilene, who had prepared a small strip in the center of his field with humus. Asking him if he could tell any difference between it and the land untreated, he replied, "Mister, I could tell it in the night; so could my mules. When we are cultivating that strip they have such a light load they all but run away with me. You watch me next year; it won't be just a strip, but my whole field, that will be easy plowing."

ESSENTIALS OF GOOD BUTTER PRICES.

The Western Meat Co. has issued a circular to patrons calling attention to a probable reduction in the import duties on dairy products and urging a higher standard of quality of milk and cream as delivered to the creamery. The following are given as the essentials for cream quality:

1. Cows must be fed clean, wholesome feed and given plenty of clean pure water. They should not be allowed to eat mustard, leeks, wild onions, turnips, or other feed which will affect the quality of milk. They should be carefully and kindly handled at all times.

2. They should be kept free from manure, dirt, dust and loose hair by wiping before milking. This is very important, as large amounts of the undesirable bacteria which produce inferior quality are introduced by allowing dirt or loose hairs to get into the milk.

3. Keep your cow barn clean and well ventilated.

4. All milk pails, cans, or other vessels used for milk should be thoroughly cleaned and scalded after each using.

5. Be sure your separator is set on a solid level foundation. Clean and scald it each time after using. Also scald it immediately before using, then rinse with cold water before running milk through.

6. Skim rich cream; 35 per cent and over is best.

7. Run cream from separator over a cooler into can, which should first be thoroughly cleaned, scalded and rinsed with clean, cold water. See that lid as as well as can is thoroughly cleaned and scalded.

8. After cream is separated, keep it in a cool, clean place where ventilation is good, until thoroughly cooled before mixing it with other cooled cream.

9. Deliver or ship cream daily. Where it is absolutely impossible to do this and proper cooling facilities are maintained, deliveries or shipments may be made every other day. When delivering, protect the can of cream, from sun with wet burlap sack. This is important.

10. Cleanliness is the most important feature in the production of fine cream. Clean feed, clean water, clean cows, clean barns, clean cow yards, clean milkers with clean hands, clean utensils, clean separators, and clean milk houses will produce clean, fine cream; which will give you clean profits.

SWINE.

REGISTERED DUROC JERSEY SWINE Some extra good young boars for sale, ready for service. Best Eastern strains. Ed E. Johnson, Turlock, Cal.

REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

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REGISTERED BERKSHIRE BOARS, sired by Silver Tip Duke and Third Masterpiece. V. A. Peterson, Blacks Station, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

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REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

EUCALYPTUS STOCK FARM—Registered Duroc Swine and Holsteins; prices right. J. K. Fraser, Denair, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning. Woodland, Cal.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

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FAIRVIEW STOCK FARM—Reg. Poland-China hogs. W. A. Young, Lodi.

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REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

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HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouilletes, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

FOR SALE—Burebred yearling Cotswold bucks. For further particulars inquire of Lewis Sharp, Ruby Valley, Nevada.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

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Marketing Farm Products.

Hon. Hatton W. Sumners, congressman-at-large from Texas, has introduced a bill authorizing the Secretary of Agriculture to establish a bureau known as the Bureau of Markets for farm products. The bill provides: "The secretary of agriculture shall organize in his department a bureau to be known as the Market Bureau. The duty of such bureau shall be to aid in improving the methods of sale and distribution of agricultural products."

In speaking of the bill Mr. Sumners said:

"In no sense is the effort to create a marketing bureau in the Department of Agriculture class legislation. It would benefit producers, but under existing conditions it would be of greater benefit to consumers.

"The world faces a new condition with reference to those who farm, and must adjust itself to that condition. There is no way now to compel men to till the soil. Due to better educational opportunities and the spread of democratic ideas the average boy raised on the farm is not limited in the choice of his life vocation, as in former times, to that one taught him by his father as he was growing up. Every door of opportunity is open to him now.

"It therefore follows that we must pay those who raise our food and material for clothing as much net profit as a like investment of time, ability and capital in any other business would bring.

"It also follows that in addition to this net profit we must pay all charges upon production and bear all losses and every charge and profit resulting after the farmer has parted with his title. The farmer's net profit can not be reduced. He is quitting the farm at the present profit. That is a stupendous fact involving the gravest possibilities. People must have bread, and the cities cannot produce it. Each farmer who quits drives us toward higher prices and reduced surplus of necessities. If we are not now paying the net profit and all the charges and profit indicated, prices will continue to go up until we pay every cent of them. Economic law operating among a people equipped as we are to exercise choice of business among a considerable number of vocations makes this certain.

"The consumers' only hope of being able to reduce prices, or even to avoid further advances, is to reduce the unnecessary charges which increase the price which he is compelled to pay. While this is the consumers' most immediate problem, it is by no means his most important one. With the relative abandonment of agriculture, not only in America, but throughout the world, the world's surplus of the necessaries of life is rapidly disappearing. Under existing conditions this decrease of surplus cannot be arrested. A large total crop brings less money than a small one. A little surplus reduced and the bottom falls out of prices, and with a small decrease of normal yield prices go up enormously. There is no shock arrester of prices between years of high and low production. This penalizing production, making a bountiful harvest a curse to producers, must continue to reduce the margin between supply and absolute necessity.

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CAMELS ARE NOT COMING.

The Seattle Post says that the dispatch to the effect that El Paso business men are planning a system of camel transportation for the Southwest desert areas is in all probabilities a nebulous dream. The automobile can now or soon will distance the "ship of the desert" at his own game. The day of animal power is passing wherever there is any great amount of transportation to be done.

The project is an interesting one, however, not any the less because it has been tried in the United States once before. Ten camels were imported in 1850, but only one pair lived. They were shipped to Nevada, and as late as 1875 there were twenty-five camels there. In fact, the statutes of Nevada to this day quite solemnly lay down regulations for the herding and tethering of these strange beasts.

Why the experiment failed is lost in antiquity. The camel would have been ideal for the deserts fifty years ago. Physically, no animal is better designed for the conditions of life than the camel, but he is a stupid, vindictive beast, docile only in his stupidity. That perhaps is the reason he failed with the American frontiersman and goldseeker. He has none of the kindly, companionable qualities of the horse, burro or dog; he takes no interest in what he is doing. The riding camel will make 100 miles a day for three days without water, and the draft camel will pack half a ton. But it requires a type of mind not to be found in America to put up with camel eccentricities. The far less efficient but more intelligent burro easily claimed the service for American men of the arid West.

So, while the camel can easily adapt himself to the American desert, the American driver only under the stress of necessity will find it worth his while to get acquainted with the camel, wonderful beast that he is. The camel still possesses the mental traits of the Miocene period. He is one of the oldest associates of man, there being no wild species in existence. Either the men he lived with were abnormally stupid, or else in developing his strange structure he lost the power to progress, for he is now as he always was, a supercilious drudge.

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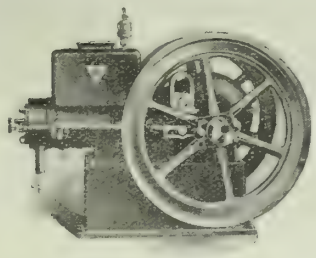

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All successful dairymen nowadays consider a good silo a very necessary part of their dairy equipment, and there is no question but that feeding silage greatly increases the milk flow. If you haven't a silo, perhaps you have made up your mind that this is the last year you are going to get along without one. If so, don't put off ordering it until late next summer and perhaps find yourself in the same [illegible] year.

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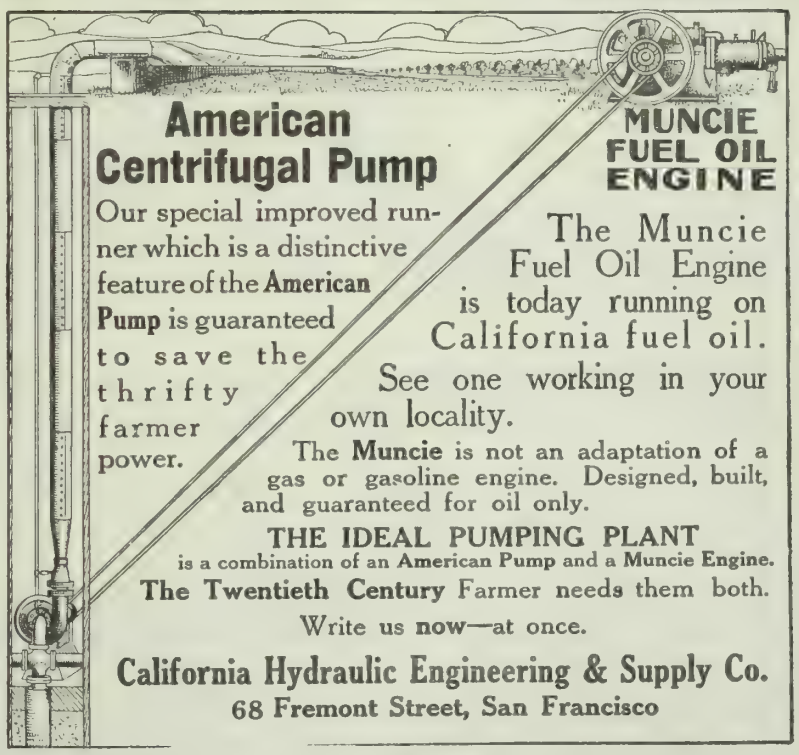

REMEDY FOR LEAKING TEAT.

The general opinion is that there is no cure for a leaking teat, and that only temporary remedies can be used. For this reason the following from Andrew Mueller, a subscriber, of Woodland, giving a successful method of permanently overcoming this trouble by a simple treatment, should be greatly appreciated by a large number of our readers:

To the Editor: I see in a recent number that you and some of your subscribers would like to know a reliable remedy for leaking teats, of which I may be able to help you out. Take mutton tallow melted, put it in a cup, and bathe the teat as hot as one can stand it with the finger—that is, so it doesn't scald the teat—and bathe just the end of the teat a reasonable time. A second application will hardly ever be necessary.

ANDREW MUELLER.

A "Ministers Week" is to be held at the University Farm, December 2 to 5. The meetings will be devoted to a discussion of rural problems which the clergy could be helpful in solving.

With the Livestock Men.

A company known as the Biggs Percheron Horse Co. has been formed at Biggs, Colusa county, and the horse Karaba 95224 purchased from McLaughlin Bros. of Oakland.

Three Humboldt county dairymen have purchased 700 acres of the Ball ranch, near Willows, with the intention of planting it to alfalfa.

A fine herd of dairy cattle was recently shipped from Stockton to Walker & Marsac of Greenview, Siskiyou county, making a total of 220 cows on their ranch. Abner Weed will also ship about 600 head of cattle into the district soon.

In writing from Whitewater, Wisconsin, W. Fisk, of Davis, states that he has secured a good bunch of Jerseys which he will ship home soon.

The herd of Guernseys owned by A. J. McKenzie, of Yuba City, has been purchased by the University Farm at Davis. These are the first Guernseys purchased by the University and are considered one of the best herds in the State One of the outstanding individuals is the cow Yeksa Bloom, who is a half sister to the world's record Guernsey, Dolly Bloom.

The Holstein cow Crown Princess Maxie De Kol, 118991, has broken the world's record for fat production in the senior four-year-old class of the 30-day division by producing 113.8 pounds of fat from 2588.4 pounds of milk. She is owned by G. W. Rising, of Fayette, Ohio.

A new plan for distributing milk is being investigated by some of the larger milk dealers at Chico. The plan is to have a clearing house where all of the milk will be hauled and afterward delivered, thereby saving a good deal of the cost of delivery.

A report from Sanger states that feed in the mountains east of that town is in very poor condition and also the range cattle. Large numbers of dairy cattle are also being disposed of in the same district on account of lack of feed.

It is estimated that $75,000 was paid out to dairymen in Fresno county by the local creameries, the past week, for butter-fat received in September.

It is feared that several head of cattle have been bitten by a mad dog in the district adjacent to Bodego in Sonoma county.

State Dairy Inspector J. Andreasen secured a conviction against A. C. Stevens, creamery man of Auburn, Placer county, who was charged with selling underweight butter and under-reading his cream tests. He was fined $75.

While visiting the Castroville section in Monterey county, the State Dairy Inspector warned several dairymen against keeping unsanitary dairies.

A recent land buyer in Yolo county was M. J. Eccleston, who plans to conduct a dairy on land he purchased near Madison.

Dairying is the most prosperous industry in California, according to H. J. Long, who, after making an extended trip, has returned home to Mason, Nevada. Being a land owner in the Fallon district, he advises alfalfa men to take up dairying on a large scale.

At an auction sale at Corcoran, Kings county, one cow sold for $145. This is an exceptionally high price for dairy cows and shows that farmers in that section are realizing the value of good stock.

Cattle thieves are said to be operating in Monterey county, several cattlemen having reported losses in this way during the past few days.

Among other speakers to address the Dairymen's Convention at Tulare, on November 6, will be C. M. Smith, of Oakland, who will talk on "Agricultural Conditions as they Prevail in Europe."

George Huffsmith, of Fresno, plans to install a modern dairy plant near Porterville, providing he can find a suitable location.

Despite the dry year, the Western Yolo Creamery of Winters has increased its output from 25 tons to 60 tons during the past year, due, it is said, to better management.

Although a comparatively new industry for the district, it is stated that the Alpaugh section of Kern county is rapidly becoming a dairy country. Among those having pure-bred cows are J. J. Chambers, who has a herd of Holsteins, and F. J. Robejohnnes, who has a nice foundation of Jerseys.

It is reported that H. L. Nelson contemplates starting a new creamery at Klamath Falls, Oregon. This will make two creameries for that town.

Dr. C. L. Megowan, of Sacramento, reports that a great deal of tubercular infested meat is being sold in that city and is warning residents to be careful in purchasing from local markets who do not guarantee their meat.

Several companies are said to be organizing with the intention of starting large cattle ranches in South Africa. One company is investing $5,000,000 with the expectation of shipping meat to European and American points.

The cattle thieves who have been operating in the mountains back of Los Altos for some time have been caught, and further losses are not expected in that way.

It is expected that Madera county will have a co-operative creamery by the first of next year if plans which are now being formulated go through.

The cattle and land products show held in Sisson, Siskiyou county, proved an interesting feature last week, at which time a creamerymen's association was formed. A fine display of fruit and vegetables was on exhibition and a good attendance was reported each day.

A company of Danish dairymen have bonded 500 acres of land near Wheatland which was a part of the Oakley Homestead Tract. It is stated that they will take possession as soon as they can settle up their affairs in the East.

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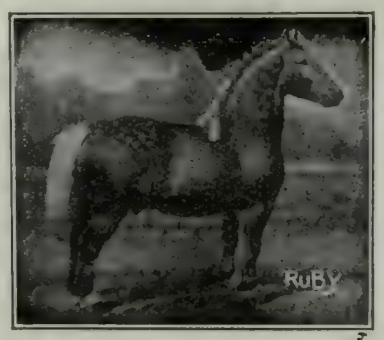

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At the State Fair just closed, every first prize in the Shire classes was won by horses imported by the Salvador Stock Farm.

Stallions and mares for sale at reasonable prices.

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Silage Corn Wanted.

To the Editor: The request made by the Livestock Department of the Panama-Pacific International Exposition some time since for information from farmers who would be able to grow corn for the manufacture of ensilage for use in feeding the cattle on exhibition at the time of the Exposition, and which was published in your paper, met with numerous responses, but as yet no one seems willing to undertake to grow corn for ensilage purposes on a tonnage basis. Corn seems to be a doubtful crop in the regions from which your subscribers report.

It is now suggested that as the necessity for ensilage for feeding exhibit cattle still exists, and as this ensilage material must be grown during the season of 1914, that the farmers who are in a position to grow Kaffir, Milo, or some other good ensilage-making crop, would find it to their interest to correspond with this department if they are in position to deliver such crops on a tonnage basis, at bay points, either on boat or car.

Information as to experience in feeding corn or Kaffir ensilage, the cost of its manufacture, and the general cost of the maintenance of dairy cows in California, and especially in the bay region, are still desired by the Department of Live Stock, and the readers of your excellent paper would confer a favor by furnishing such information as has come through their personal experience.

T. D. GRAHAM,
Acting Chief, Live Stock Dept. Panama-Pacific Exposition.
San Francisco.

[It ought to be possible to get any quantity of Indian corn in condition for the silo in Santa Rosa, Sonoma, or Napa valleys within easy hauling of bay craft to be delivered at the Exposition wharf without rehandling. If sorghum is also wanted, it can be had and be easily delivered from along the Sacramento or San Joaquin rivers. Some growers in such places as we have named should consult with Mr. Graham. The other information should be freely furnished.—EDITOR.]

CONVICTIONS BY STATE DAIRY BUREAU.

The State Dairy Bureau is doing an excellent work in promoting good dairy conditions, and although the policy is to have as few arrests as are possible, two recent cases should be of interest to dairymen all over California.

The most important was the arrest and conviction of a creamery in one of the northern interior counties for making false returns on cream tests to patrons. Dairymen frequently complain that creameries under-read tests, though probably this is not extensively done. The creamery in question, however, was making a lot of easy money by under-reading tests from 3 to as much as 14%. Upon complaint of the secretary, F. W. Andreasen, inspectors gathered evidence and the manager was convicted and fined $25. He was also making money at the other end, selling short-weight butter, and was convicted of that also. Altogether, there were three convictions in this case and the total fines were $75. The same concern had previously been convicted of selling short-weight butter, but probably will be more careful later. Any reasonable grounds for believing that a creamery is under-reading cream tests will be investigated by the Bureau.

The other case was of a dairyman near San Rafael, in whose herd anthrax broke out. This disease occurred a number of years before on the place, and evidently had not been properly handled. This dairyman, for example, burnt up the first cow dying, but made a poor job of it, leaving part of one leg to knock around and spread the disease. He might as well not have burned it at all. The disease is communicable to human beings, and an inspector of the Bureau ordered the dairyman not to sell any milk until the secretary could investigate the matter. He sold the milk anyway, and was fined $25. The case showed the necessity for careful work when this disease occurs.

BREEDERS' SALES.

We wish to call the attention of pure-bred live stock breeders to this column. Sales of pure-bred stock of all kinds will be reported here, free of charge, providing we are supplied with the animal's name and registration number, buyer's name and address. Below are the sales reported to us for the past month.

JERSEY CATTLE.

G. O. Hillier, Modesto, sold to N. H. Locke Co. one heifer sired by King Polo of Bleakhouse, also one heifer calf by same bull to J. C. Johnson, of Ukiah, Sonoma county.

Royal Jersey Herd, Kings county, sold to C. Starr, Mable's Kentucky Fox, 94680, and to H. Crabtree, Ruth's Golden Glory, 91375.

HOLSTEIN CATTLE.

Floribel Farming & Cattle Co., Hardwick, sold Floribel Pietertje Segis Pontiac to C. A. Stone of Hanford.

G. U. Clark, Hanford, sold bull calf sired by Meg o' the Mist Legend, 65800, to Charles Hubbard, Riverbend.

BERKSHIRES.

Grape Wild Farm, Mayhews, sold Star May Belle 3rd, 179739, and Star May Belle 4th, 179740, to T. G. Mickfessel, Hanford; Mayhew's Black Girl 2nd, 179745, Premier's Hopland Belle, 182558, and Superior Rival's Princess 2nd, 182565, to A. W. Foster, San Francisco; Premier's Master Dake, 182555, and Grape Wild Princess, 179726, to Mrs. M. McKee, Medford, Oregon; Silver Star 4th, 182569, and Silver Star 5th, 182570, to Marshall-Mewson Co., Ingomar; Gem's Master Lee, 182559, to E. C. Rand, Santa Rosa; Gem's Master Lee 2nd, 182560, to W. A. Roof, Gridley; Champion Star A, 182566, to A. M. Allen, Monterey; Champion Star B, 182567, to F. W. Buck, Vacaville; Champion Star G to A. C. Tolman, Gavioto; 9 sows to B. C. Soule, Oakland.

CURE FOR PROUD FLESH ON HORN WOUNDS.

To the Editor: About three weeks ago I sawed the horns off from a fine Holstein cow. Instead of healing, they began to fester, and matter ran from both, as well as the nose. I succeeded in stopping the flow of matter, but since then proud flesh has set in, and although I have used alum, sheep dip, and peroxide, her condition has not been bettered. The cow eats well and gives a fair flow of milk. Will you kindly tell me through your veterinary department what treatment I should use.—K. A. P., Modesto.

ANSWER BY DR. E. J. CREELY.

Use the following:
Lysol, 4 ounce.
Iodine, 1 ounce.
Turpentine, 8 ounces.
Glycerine, 19 ounces.
Oil Mirbane, ½ ounce.
Mix, and apply twice daily after washing.

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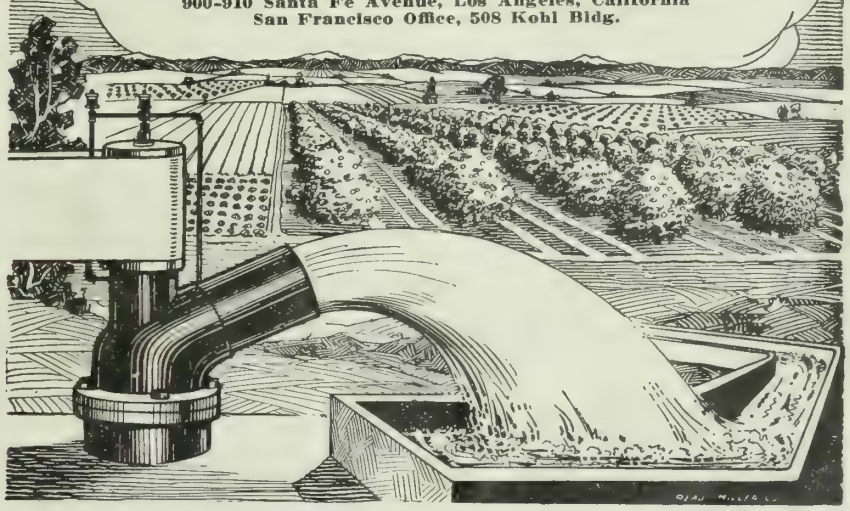

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WEANING THE FOAL.

It is common knowledge that the proper raising of a colt is just as important in developing a good animal as its breeding and that the weaning period is one of the critical periods. That is, for the proper development of a colt it must be kept growing all the time, and even if there is no special trouble in weaning a colt, there may be quite a bit of danger of setting it back a good deal. Therefore good methods of weaning colts are greatly to be desired. The English are great for developing good horse flesh, and this is what Farm and Home, one of their foremost stock papers, has to say on the subject. A few details will be different here, especially in feeding, but the general facts will be clear enough without comment.

The weaning of foals takes place toward or during the autumn, but no particular rule is observed in regard to the age, as they may be taken off the dam at any time between four and six months old. Indeed, sometimes they are actually weaned before they reach the former age, more particularly foals born late in the season; but that is not to be recommended. Generally speaking, it is always desirable to postpone the weaning for as long as is feasible, since the more forward and better grown foals are at weaning time the more easily they will get over this critical stage. The exact time will depend upon circumstances, and on the farm these oftentimes necessitate its being done at a comparatively early age, for farmers who breed from working mares are not usually able to study the special interests of foals to the same extent as can be done on stud farms.

When the mare remains lying out in idleness at grass all through the autumn, the most suitable course usually is to allow the foal to run with her until some time in October, or even to the end of that month, although quite possibly—and this applies especially in the case of old mares—her milk may give out earlier. When left with its dam late into the autumn the foal will often practically wean itself, in which case the process is got over without any trouble; and even when the mare no longer suckles it, the two may very suitably continue to run together on the same pasture field, if only for the sake of companionship. In the case of mares required for work, whether they are of the carting or the light-legged class, weaning will necessarily be accomplished later. A working mare cannot be expected to continue supporting her foal for as long a period as an idle mare, as that would tax her strength and pull down her condition too much. Moreover, earlier weaning is frequently necessitated owing to the mare having no more milk, for constant work has a tendency to dry up the milk flow at a comparatively early stage. Some regard must be had to the condition of the foal, and early weaning is only advisable in the case of foals that are in a forward and thriving condition.

Hand Feeding.—It is strongly advised to push foals on well by feeding them on manger food—crushed oats and bran—for some little time before they are to be weaned, so as to have them in as thriving a condition as may be when the separation from the dam takes place. When they have been hand fed in this way the weaning is all the more readily accomplished, as they will feel the loss of the milk less, and be thoroughly accustomed to eating a little corn, etc. If it is properly fed and cared for before and immediately after weaning a foal should not lose any flesh. Besides oats and bran, the staple manger foods—oatmeal and ground linseed cake—are most useful as a standby at weaning time. The oatmeal may be given both in a dry state and in the form of gruel. Weakly animals might also suitably have some skim milk, or even buttermilk, every day for a month or so, which they will quickly learn to drink greedily, and which are most effective foods for promoting a thriving condition. Older foals and stronger ones will not require these special attentions, a fair allowance of crushed oats and bran—together with some good hay, if it is late in the autumn or grass keep is short—being all they need, though one cannot easily do foals too well at this stage. The average farmer, at any rate, is not likely ever to err on the side of feeding his foals too liberally, and over-feeding, causing foals to go wrong in their joints and to suffer ill effects through being forced along too rapidly and overgrowing themselves, is heard of as a rule only in breeding studs where showing of the young stock is gone in for.

It having been determined to wean the foal, the best plan is straightway to separate it from the dam for good. Some breeders are in favor of accomplishing the weaning process by degrees, separating the two only temporarily at first and continuing for some days to allow the foal to have access to the mare and suck her at gradually lengthening intervals, the object being to accustom the youngster to do without its mother in a gradual manner, but this mode of weaning unnecessarily frets both mare and foal, and does neither any good. Far from making things easier, it does just the reverse, and these repeated separations and visits are most liable to make the foal cease thriving for the time being, owing to the constant fretting it gives rise to. An experienced old breeder once remarked that this gradual system, though intended to be a kindness to the foal and to facilitate matters for it, put him in mind of the owner of a young puppy, who, wishing to dock its tail, could not bring himself to cut the entire surplus length off all at once, but thought he was acting more kindly by cutting off an inch each day, until it was sufficiently short. An important detail to observe when the foal is taken away from the dam is to accommodate them far enough away from each other that they cannot hear one another's neighing.

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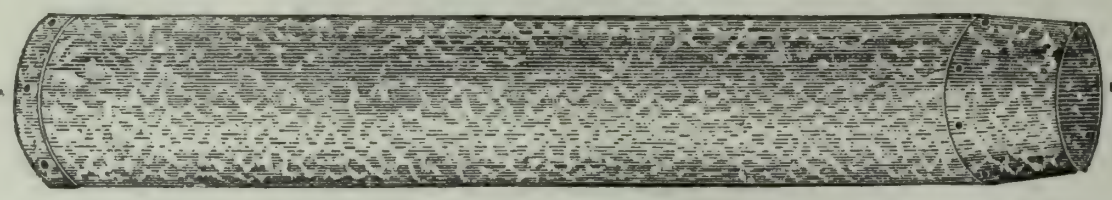

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THE AUTO STRIKES THE OX.

Consul H. D. Baker tells of the opportunities of the American make of auto truck in Ceylon. Owing to the prevalence of deadly diseases among the bullocks, the natives are being forced to use autos, and so adaptive has the local government shown itself that the new budget for 1913-14 provides for an appropriation of about $22,000 as initial cost of motor mail vans. Light machines are already in use by the more advanced farmers, and the demand for more is growing daily. There is certainly something striking in the spectacle of a people passing at a bound from the ox wagon of antiquity to the latest word in American autos. For a parallel we must go to Siam, where the king has just disposed of his royal white elephants for a 1913 touring car and a fleet of airships.

A Typical Southern California Poultry Ranch.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

While visiting the Riverside County Fair and Poultry Show, I was, as stated last week, invited to visit one of the famous Riverside poultry ranches. As Riverside is an inland city, there will probably never be such cheap transportation rates as the poultrymen have at Petaluma, but this and it being farther from a large market are the only reasons I see why it should not surpass even Petaluma. The climate is everything that can be desired for poultry, alfalfa grows in abundance, and the soil is well adapted for good sanitary poultry raising. So much for this section as a poultry center in general, but this article is just to illustrate what one man is doing in this section.

W. G. Suits is a carpenter by trade and, having a penchant for chickens, he kept a few on a town lot. Having decided that poultry raising could be made to pay, and I presume being tired of working for "the other fellow," he decided to embark in the poultry business on a larger scale and devote his time to it. In November, 1909, he bought his present place, consisting of eight acres of land and equipped for and stocked with 1000 hens. At the present time he is carrying 1800 hens and building more houses, so that he can at least carry 2000 laying hens the coming season.

Mr. Suits, however, is not satisfied to build houses just to carry more stock; he believes in building up the stock both in quality and numbers. With that aim he commenced to trap-nest his hens, and the first year he found he had 15 hens out of a possible 200 that laid from 200 to 239 eggs each in the year. The second year, from the same number of hens he had 27 that laid from 200 to 268 eggs. The third year the pullets of these hens were trap-nested, and the increase of egg yield was remarkable. Out of 200 trap-nested pullets, 75 laid from 200 to 261 eggs in the 12 months.

One pen of 50 pullets averaged 202. Of course, this meant a lot of work, and with the Hogan system intelligently used the same results could have been obtained with so much less labor.

And right here let me say to the many inquirers that the Hogan system is now in book form; all secrecy is done away with, and the book is sold at $2.

To return to Mr. Suits' records: One pen that I saw in the poultry show were half naked, being in the molt, and yet the eggs were laid in plain sight, the hens not being a bit backward about coming forward with the hen-fruit, and their records were hung up on the coop. There were 12 hens in the yard, and this is the record for them for one year: 241, 262, 249, 242, 243, 247, 240, 260, 250, 250, 249, 261; total egg yield, 2,994; average, 250.

This surely speaks well for the flock, because while any one may have a few extra good layers, it is not often that we find such a good average.

THE FEEDING.—It is needless to say that Mr. Suits is a good feeder, for no matter what capacity a hen has to lay, if she is not fed the proper elements for egg production the eggs will not be forthcoming. The hens are being fed both dry and moist mash at the present time, and green cut alfalfa is used in the moist mash and is no doubt relished; anyway, the feed boxes appeared to be well taken care of. Barley, soaked for 12 hours and then drained in pans with proper drainage is fed for, I presume, one feed a day, and wheat for the other.

Mr. Suits thinks barley just commencing to sprout is a good strong feed, and is a money saver, as he stated that when he quit using it and fed just one grain, wheat, his feed bills went up alarmingly.

In addition to the mash and grains, the hens have plenty of nice alfalfa run through a cutter into short lengths, and in my opinion the hens have a well balanced ration and could not very well be better fed for eggs.

METHOD OF HOUSING.—A week or two ago we spoke of a little egg factory where intensive egg farming was carried on and everything done under cover. While this Riverside poultry ranch does not aim to be so very intensive, there is nothing wasted in room. And yet everything as nearly as possible is done under cover. The houses that were on the place when Mr. Suits bought have been remodeled and made so convenient for both hens and care-taker that the work is easily done; while the new houses are all being made to fill every requirement.

There are two houses 128 feet long by 22 feet wide, an alleyway runs the entire length, and each pen contains about 50 Leghorn hens, and these are allotted 10 feet for a roosting place and 10 feet for a scratching shed. Right along the alleyway every scratching shed apartment has a raised platform that holds the feed-box and water vessels just high enough so that no litter can be scratched into them when the hens are exercising.

Along the entire length of these houses run water pipes, and the vessels are filled at each pen from a faucet, so there are no needless steps and certainly no excuse for the hens going short of water. Earthenware crocks are the drinking vessels used, and these are by far the very best drinking vessel for fowls, because if it is necessary to give medicine at any time it can be safely administered in earthen crocks; besides, they are more sanitary, being easily cleaned. When feeding grain, the feeding is simplified so that anyone can do it; all one has to do is to walk along the alleway feeding first the pen on the right then the pen on the left. In addition to these long houses there are several 80 feet long by 22 wide, all built on the same principle.

The incubator cellar is a cool, commodious building, and all the incubators were in full blast; but Mr. Suits refused to hatch chicks to order while eggs are high.

Last season there were 20,000 chicks hatched, a great many of them being sold, and this coming season the capacity will be taxed to keep up with the increasing trade.

BROODING.—Formerly the chicks were brooded by an oil stove, but Mr. Suits is installing the H. A. George fresh-air brooders now, so that the season will mark more progress in the brooding of the chicks.

The flock were originally the Wykoff strain, but any man who builds up a strain of layers as Mr. Suits has done is surely entitled to the glory of calling them his strain. New blood is, however, introduced when needed from Wykoff.

As a flock the birds are remarkable, being quite large and particularly healthy looking. I saw very many among them that would have taken prizes in the show-room, and in point of fact Mr. Suits won quite a few prizes, though he says until 1912 he never exhibited at all. At Riverside in 1912 he won first and special breeding yard; first prize exhibition pen; first prize hen; third prize cock; cup for best display in White Leghorns, and cup for best breeding yard by novice.

This is not such a bad record for a man who laid no claims to fancy stock, but the blood was there, and good care, good feed, and proper selection will always bring the standard up. With a weight clause for the Leghorn breed, this flock of birds will be very much in demand by breeders who have let their flocks run too small. If Mr. Suits will send a few of his birds to some Northern show, I feel sure he can increase his business. I have gone into particulars because Northern readers will naturally be interested in knowing "how it's done in the Southland," and really I have had very little time since coming here to visit the poultry ranches around.

Mr. Suits was a very busy man, being superintendent of the poultry show in addition to his own work; yet he very kindly sent his son with an auto to take me to the ranch, and after showing me all over, took me back again to the show-room. This does not look a very big thing except to those who happen to know what it means to be "real busy"; those who do, can appreciate the kindness.

Not being a prophet, it would not be safe to predict too much, but so far as my judgment goes, I feel safe in saying Mr. Suits will never go back to his trade. The call of the hen has got him, and he will go on in his chosen life out in the open, where health and an independent living can be made by all who start out in earnest. The idler, the loafer, or the careless man will never make a living, not even "salt to his mush," out of chickens. It takes energetic men and women possessed of good common sense, at least, to make poultry-raising pay.

WINTER GREENS FOR FOWLS.

To the Editor: I want to sow something for green feed for poultry, to come as early as possible. How about rape? Would it do to sow as soon as it rains, or would it be too cold here this winter? It does well sown in the spring. Lettuce is good, but have to wait too long. Any suggestions will be thankfully received.—J. R. A., Halls Valley, San Jos

[Probably barley or rye would come quickest and make more most green stuff during December and January. Rape or Oregon kale or Jersey kale will make good winter growth, but they should have been started a month or two ago and the plants ready for the field as soon as rains enough come to wet the land deeply. Still you can start now from the seed, and the Oregon vetch is also a good thing to try. All these are hardy enough to stand any frost you are likely to get, and if you try several you will know which to concentrate on next year.—EDITOR.]

The Tulare County Poultry Association has been formed and will work for a large poultry department at the coming Citrus Fair of Tulare county.

Matias Erro, of Fresno, has purchaesd 320 acres in Kings county, south of Hanford in Tulare Lake. During the first year grain will be raised.

POULTRY.

CHOICE BUFF ORPINGTON cockerels for sale; prize winning stock. W. Delamater, Salida, Cal.

ORPINGTONS, BUFF AND WHITE—Summer sale of stock. Mrs. S. Swaysgood, Route 2. Pomona, Cal.

FOR SELECTED EGGS AND CHICKS from S. C. White Leghorns, see Hopland Stock Farm advertisement.

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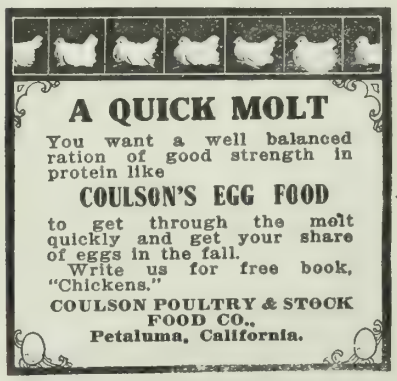

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The Home Circle.

The Point of View.

From the little station platform he stepped down among the grass and dandelions and picked a white, fluffy reminder of a departed flower.

"Blow it, Babesy!"

When Buddie commanded, it was hers but to obey. Buddie was five. Was that not enough? She raised the white, fluffy reminder until it came on a level with her cherub mouth and blew a monstrous whiff.

"Huh! See me!" There was a spectacular whirl of fluttering, white flakes. "There! I blew 'em all off!"

Babesy gazed at him with admiration too deep for words.

"When the train comes, we're going to grandma's," announced Buddie for possibly the sixteenth time.

Babesy beamed.

"Going to gwandma's!" she echoed joyously.

"But you'll have to have your picture painted, won't she, father? 'Cuz that's why you're going."

She looked rather rueful at this suggestion. She had had her picture painted before.

"Grandma lets me play with the marble board in the attic in the plaything box when I go to see her. Perhaps she'll let you, too."

She glowed ecstatically. She had also heard of the plaything box before.

"And read me stories out of 'Peter and Ellen'; . . . and give pennies to the hand-organ man; . . . and play behind the sofa; . . . and the light going just a little when I go to sleep."

They were all familiar to her ear, these untasted joys, but she hopped in unsuppressed rapture at their indisputable approach.

"Babesy! Look! Look! The train's coming now!"

"Train's coming now!" came the pealing little echo.

They felt father's grasp tighten. It was coming nearer—it was stopping with a final, monstrous snort.

Then, there they were, rattling along all together, father looking with a certain anxious pride from one to the other, Babesy impressed into stony and unbroken silence, and Buddie still cheerful and observing.

"Don't you wish you were going to stay at Grandma's, too, father?"

"M-m-m. It would be very nice, wouldn't it?"

"'Twould be funny if you and mother were both there, wouldn't it?"

"M-m-m. Very funny."

"Say, father, wouldn't it be funny if everybody in this train was going to grandma's?"

"Why, yes, very funny."

"I guess grandma'd be s'prised, wouldn't she?"

Buddie's voice was rising in consequence of this last inspiration of imagination.

"I presume she would."

"I guess she wouldn't like it very much either, would she? Not if everybody got off and went to her house. She wouldn't like it very much, would she, father?"

"Don't talk quite so loud, Robbie. No, I don't suppose she would."

"Well, what would she do if they did?"

"I really don't know. Let's take this coat off."

"Well, would she let them all in—do you think? I guess she would be cross, wouldn't she?"

"Very likely. Look here, Robbie, look at the buttercup field."

"I guess she'd be cross! If they all tried to squeeze right in!"

"M-m-m.'

"Well jus' look, father! Jus' looker that big lake! That's a awful big lake, isn't it?"

"M-m-m. Very large."

"Well, father. Wouldn't it be awful funny if everybody on this train should just get out and hop right into that lake?"

"Very funny indeed."

"I guess they'd look wet enough, h'n! when they came back into the train again! I guess they'd be just dripping, wouldn't they?"

Various members of the audience, with the unfortunate gift of catching vivid mental pictures easily, were attempting to look unconcerned.

"Wouldn't they father?"

"Robbie, don't talk so loud! Yes, I suppose they would."

"I wouldn't be s'prised if they dripped enough to make a real little stream going right down the aisle! Would you?"

"No, I wouldn't be surprised. See here, Robbie, didn't mother put in one of your books? Let's have it."

"That lady over there's so big I guess she'd drip enough to 'most drown herself."

"Stop talking, Robbie. Now, if you'll listen, I'll read you a story."

But what is even that rare entertainment compared with all the inward suggestions in father's tone as he remarks casually,—

"Only one more station, children."

It is so dramatic to bring up in a railroad train!

Just as they were getting nicely settled in the house "behind the sofa," the little boy from "next door" put in his appearance.

"Why, how nice!" grandma had encouraged appreciatively. "Arthur has come over to play with you children."

Arthur stood silently gazing about him, looking as if he never had played with anything in his life, and never would, if he were spared. To be sure, his red sweater, on top of all his other wearing apparel, combined, with the fact that the room was warm, might have seemed a partial excuse, but he thickly explained that he had a cold and must not remove the red sweater for fear of catching more; and Arthur certainly did not look bright or entertaining as he stood muffled up to his ears, breathing heavily, and looking silently down on the unmoved recipients of his call.

The worst of it was, it actually seemed as if Arthur was barely out of the house before Buddy began to breathe in a peculiar manner, too.

Grandma looked at his dull eyes the next morning at breakfast.

"I've always said that colds are just as contagious as can be," she declared anxiously, and thereupon she hastened to make sure that Buddie was bundled up sufficiently; but, when night came and the case still proved obstinate, the doctor was summoned. He smiled as he listened.

"Caught it from one of the neighbor's children yesterday?" he repeated. "No, I guess not. It looks to me more like a good genuine attack of measles."

"Measles!" echoed grandma, faintly, "and the child away from home! Oh, dear! Measles! Oh, dear! oh, dear!"

"Nothing at all to worry about. Just keep him warm and don't let in too much light—er—did you say that there was a little girl here, to? M-m-m. Keep her away from him."

Buddie looked rather consequential when he was carried all the way up to the third floor and stowed away in a little room by himself; and Babesy looked positively impressed when she heard about it, particularly when it was gently forced on her that she mustn't go anywhere near Buddie's room—did she understand about that? It was explained again, appropriately to her understanding.

"But she likes to come to grandma's house, doesn't she?—bless her!—even if she can't have Buddie to play with—doesn't she?"

"Buddie do!" she beamed, delightedly, appreciating somewhat confusedly, the fact of a superior advantage over Buddie not known before.

Then there came that unique and unpracticed experience of being put to bed all alone in that big room!

Grandma had just left her and was wandering anxiously down the hall.

"Oh, no! No, child!" The little white figure flitting round the corner up there at the other end was rescued just in time. "You mustn't go to Buddie's room! You mustn't!"

But after a day or two the child did not look well. There was no doubt about that, and grandma declared she was getting concerned.

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"You like to stay here, don't you, dear?" she queried anxiously one evening, just before dinner.

"Buddie do," murmured Babesy, with something like a wistful, wondering quiver of the lips. It had been the final unanswerable argument always.

The lights were lit down below, and again she had been tucked into the big bed. They concluded that she was beginning to get used to it after all, and grandma leaned back in the comfortable old library chair to rest, her pretty gray hair brushing softly against the dull crimson chair back.

Why what was that? What was it? That thin, suffering, high-pitched, little cry—what was the matter with that baby!

She rushed upstairs. From the big bed came the convulsed sob, and a quivering little heap struggled unequally with itself under the bedclothes.

"Why, grandma's blessed baby! What is it? Tell grandma! Didn't she like grandma's house? Would she rather go home? She didn't like grandma's old house very much, anyway?"

There was a half distinct, wet little murmur, and suddenly, half intuitively, grandma seemed to feel and understand it all—the process that had been struggling to work itself out in the baby mind ever since the day when she had energetically insisted "Buddie do!" and delightedly on them all.

"No—no—she didn't—did she?" murmured grandma.

"B—Buddie—" came the wet, miserable little sob again— "B—B—Buddie—do!"

But not until the next morning did the real climax of despair arrive. Then it was that Ellen, always faithful in time of domestic difficulty, flew distractedly about the halls, and grandma followed her, pale with prophetic, horrible fears. The big white bed was empty, and the small white guest had flown.

"O Ellen, Ellen," wailed grandma, "where is she! Are any of the outside doors unlocked? Go and see!"

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Down the stairs rushed Ellen; and, when she came back, there's was grandma's voice from above, calling softly now and imperatively. Ellen followed it and found grandma in Buddie's room. In the small bed lay two little people soundly sleeping. Their hot, damp little hands were tightly clasped, and on Babesy's cheeks were still the marks of tears.

"How—how did it happen, Ellen?" Grandma looked wretched.

"I couldn't tell you, ma'am. An hour ago he was sound asleep, and I haven't heard a thing out of the room since."

"But, Ellen, she must surely have caught it now!" She lifted the smaller child up gently and stood wondering.

"She's hot, Ellen! She—she's spotted! Ellen! Call the doctor!"

This time the doctor looked down on his two patients and smiled again.

"Why, they were probably both exposed at the same time," he reasoned cheerfully. "No, there's not a thing to worry about. They're all right. Why shouldn't they have the measles if they want to? Just let them stay right here together and get as much amusement out of it as they can!"

Babesy looked up from the other bed that had somehow grown up there suddenly, close to Buddie's, hot, spotted, sublimely happy; and Buddie looked over at her, as if the rare, joyful climax of measles had truly come.

But it had not. It was yet to come.

Grandma was standing in the doorway, smiling mysteriously.

"You see, children," she said, "I wrote to mother about Buddie. Would you—would you like to see mother?"

They bounced up in bed. They stretched out their spotted little arms to her—oh, the joy of it! They were wriggling in her arms, both of them, and she was dropping tears on them both.

"The doctor came, mother," explained Buddie, conscientiously, "and I've got measles."

"I got measles, too!" came a small, faithful echo, and Babesy, still heavy-eyed and hot, still parched and spotted, looked up again with a faint, spent smile of perfect thankfulness.—Lucy Pratt in Register.

Making Farm Life Attractive.

Since writing the article that appeared in this department under the above head last week, we had the pleasure of talking with H. E. Thayer of Metz, Monterey county, concerning country schools and their needs. Mr. Thayer stated that it was his judgment that the country schools had made no advance in methods during the past thirty years. During that time he had raised a family and had acted as a school director many terms.

* * *

The rural school is a rural need and the school district should be organized to conform to that need. In the past forty years in the United States there has been an increase of one half bushel per acre in the corn yield, while the wheat yield has fallen off two bushels per acre. The use of commercial fertilizers is on the increase. The need of commercial co-operation in selling is more needed than ever before. The country school has witnessed the decadence of rural social life and the exodus to the city. While not directly responsible for these conditions, it has done nothing to correct them in even a slight degree. With Mr. Thayer we believe that a readjustment of the rural school is due and must be made.

* * *

Rural life should consist of more than eating, sleeping and working. All work is irksome, but no work in the world should be as interesting or as all-absorbing as farming by modern methods, and where properly done it is remunerative and attractive. The leisure hours on the farm, Saturday, afternoons, Sundays, evenings, should be made attractive that they will mean pleasure instead of discontent. Much talk is now indulged in about the "back to the farm" movement. How can we make conditions so attractive on the farm that we will be glad to stay?

* * *

Women on the farm are partly responsible for the hard unattractive conditions that exist. True these conditions are growing better with the advent of the telephone, rural mail delivery, and in many places electrical devices. But how much better and more comfortable their lives would become if they would adopt more of the modern conveniences offered. Instead of the servant (and that problem) there were installed in country homes modern plumbing, also modern lighting and heating devices. Let machinery do most of the dish washing as well as floor cleaning. Cooking can be so planned and executed now as to save nearly half the former drudgery.

* * *

Not only should the school and house work be modernized, but the leisure hours should be spent differently. Good literature may be had at very moderate cost, especially if a well chosen library is owned by the school district. Player pianos or phonographs are now becoming so popular and cheap that they should be in every neighborhood. Some of the old fashioned country entertainments, that have been allowed to lapse, should be started over again. A good club is a fine thing for any community. Even if it is only a debating club. But why not have an organization that would have several departments that every member of the community may be an interested and working member.

* * *

The nation is beginning to realize that its greatest asset in the future will lie in prosperous agricultural communities, and to that end the work by the government in a score of different ways is tending. Co-operative marketing as well as co-operation in financing will help to make production more profitable, but not only must the farmer be prosperous also he must be contented. To make farm life attractive there must be more social life, less loneliness, more comforts. To bring these conditions about the agriculturalists as a whole should, however, help in the work. The high prices for the produce of the farms that have been secured for the past ten years ought to be maintained and in some instances increased, and to do this better distributing facilities must be introduced. The successful farmer of the future will be the man who not only produces largely, but who will know how to sell properly. In the meantime he will see that conditions on his farm are such that his children and his help will not be looking for a chance to leave the farm.

Who was it who said that the republic is like a raft,—our feet are always in the water, but it never sinks?

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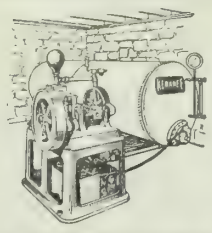

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DIRECT SUPPLY CO., INC.

341 Commercial St San Francisco, California

THE MARKETS.

San Francisco, Oct. 29, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The local wheat trade is quiet, with the large buyers getting most of their supplies in the North, but the market shows a firmer tone than for a couple of weeks past. Forty-fold has been marked up a little, and it is hard to get either northern of California club at the inside figure.

California Club, ctl	$1.47½	@1.50
Forty-fold	1.50	@1.52½
Northern Club	1.47½	@1.50
Northern Bluestem	1.65	@1.67½
Northern Red	1.55	@1.70

BARLEY.

Values show no quotable change, business being limited in either spot or future grain. The market, however, continues quite firm, with holders apparently in no hurry to sell.

Brewing and Shipping	$1.42½	@1.47½
Choice Feed, per ctl	1.37½	@1.40
Common Feed	1.30	@1.35

OATS.

Spot offerings of white oats are rather limited, and the price has been marked up a little. Red oats for seed are also quite firm, though the movement so far has been below normal for this season, as buyers are waiting for rain.

Red Feed	$1.65	@1.85
Seed	2.25	@2.30
Gray	Nominal	
White	1.50	@1.55
Black Seed	2.50	@3.00

CORN.

All descriptions of corn remain firm and scarce, with very little marketable California corn offered, and no great amount of Eastern coming in. The demand is very moderate at present, and there is nothing new in prices.

California Yellow	Nominal	
Eastern Yellow	$1.95	@2.00
Eastern White	Nominal	

RYE.

Both grades are offered at the same prices as for some weeks past, but there is no demand worth mentioning at present.

Rye, per ctl	$1.45	@1.50
Seed	1.65	@1.70

BEANS.

The shipping demand has picked up again, and the new crop is moving in very good shape. The weather has been exceptionally good for the harvesting of the crop, and the output is showing up well as to quality, with very little damaged stock, while the quantity will be somewhat larger than was at first expected. Buyers, however, are keeping in the market, and there is a very steady feeling in regard to prices, with a continued upward tendency in some lines. Red kidney beans have been marked up rather sharply this week, and pinks are also a little higher.

(On wharf.)

Bayos, per ctl	$3.50	@3.70
Blackeyes	3.80	@4.00
Cranberry Beans	3.75	@4.00
Horse Beans	1.90	@2.10
Small Whites	5.00	@5.25
Large Whites	3.10	@3.25
Limas	4.75	@4.85
Pea	Nominal	
Pink	2.75	@2.85
Red Kidneys	3.75	@4.00
Mexican Red	3.60	@3.90

SEEDS.

There is a little more demand for alfalfa, but in general the movement is rather light for this time of year. While some lines are in good supply, prices are well maintained.

Alfalfa	12½	@15 c
Broomcorn seed, per ton	Nominal	
Brown Mustard, per lb		3¾c
Canary	7	@ 7½c
Hemp		3 c
Millet	2½	@ 2¾c
Timothy	Nominal	
Yellow Mustard	Nominal	

FLOUR.

Values have stood without change for some time. Local market requirements show little fluctuation, and the market is without special feature.

Cal. Family Extras	$5.60	@6.00
Bakers' Extras	4.65	@5.20
Superfine	3.90	@4.10
Oregon and Washington		4.90

Hay and Feedstuffs.

HAY.

Business continues quiet, as for some time past, both here and in the country, though with the clean-up in the fields there is a little firmer feeling in regard to grain hay. Arrivals are still running extremely light, and these consist mostly of alfalfa from the river districts. Production of alfalfa throughout the State has been very heavy this year, and the long dry season has permitted the successful curing of later crops than usual. The abundant supply and comparative cheapness of this hay has led to its being used much more extensively here than usual, and the consumption in the country is heavy. The supply, however, is considered ample. Holders of grain hay in the country are taking a little firmer view, but there is no immediate prospect of larger demands in this market.

No. 1 Wheat, or Wheat and Oats	$16.00@17.00
do No. 2	14.00@16.00
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 80c

FEEDSTUFFS.

The oversupply of bran has been moved off, and the market has stiffened up again to about the former figure. Cocoanut meal also is higher. Other lines are moving fairly well at the old prices.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	25.00@26.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	30.00@31.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Rolled Oats	33.00@34.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Onions are still firmly held, with a slight advance over the last figures. Prices on general garden truck show an upward tendency, as arrivals of several lines are beginning to drop off. Tomatoes, however, are still coming in quite freely, and the top price is lower than last week. Cabbage, as has been expected, is turning out very scarce locally, and prices have been unusually high, though some stock is now arriving from Oregon, causing a drop from the recent figures. Offerings of string and lima beans are very small, causing some advance, and cucumbers, green peppers, summer squash and okra have been marked up quite sharply.

Onions: New Yellow, River, ctl.	$ 1.25	@ 1.50
Garlic, per lb.	7	@ 9c
Cabbage, per ctl	1.50	@ 2.00
Cucumbers, per box	75c	@ 1.25
Green Peppers, box	25	@ 60c
Carrots, per sack	60	@ 75c
Green Peas, lb	6	@ 8c
String Beans, lb	4	@ 6c
Summer Squash, lug box	1.00	@ 1.50
Okra, box		75c
Tomatoes, box	25	@ 75c
Eggplant, box	50	@ 95c
Lima Beans, lb	6	@ 8c
Sprouts, lb.	3½	@ 5c
Celery, doz.	30	@ 40c
Rhubarb, box	70c	@ 1.25

POTATOES.

Notwithstanding the reported purchase of supplies in Nevada, the local market is holding quite steady, with a slight upward movement in prices on all desirable lots. Salinas stock is especially strong, and Oregon Burbanks are selling up to $1.50.

Salinas, ctl.	$ 1.90	@ 2.00
New River Whites	75c	@ 1.10
Sweet Potatoes, per ctl	1.25	@ 1.45
Oregon Burbanks	1.30	@ 1.50

Dairy Produce.

POULTRY.

Both chickens and turkeys continue to come in rather liberally, and the market is beginning to feel the competition of wild game. This, together with the drop in demand which naturally came this week, has caused a much weaker feeling in regard to prices. Young stock is especially plentiful, and fryers, broilers, and young roosters are all lower. Live and dressed turkeys have also been marked down, though the movement is steadily increasing.

Large Broilers, per lb	20	@22 c
Small Broilers, per lb	22	@24 c
Fryers, per lb	18	@20 c
Hens, extra, per lb	18	@19 c
Hens, large, per lb	17	@18 c
Small Hens, per lb	14	@15 c
Old Roosters, per lb		12 c
Young Roosters, per lb	18	@20 c
Squabs, per doz	$ 1.50	@ 2.00
Geese, per pair	2.00	@ 3.00
Ducks, doz.	4.50	@ 8.00
Turkeys, live, per lb	24	@26 c
do dressed	27	@30 c

BUTTER.

After standing for several days at the last quotation, extras have taken an upward turn. This is attributed both to very moderate offerings from nearby producing districts and to the firmness in other parts of the country. While the lower grades are now coming in competition with quite a lot of Eastern stock, values are steadily held.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	31	—	31	31	31½	32
Prime Firsts	30	—	30	30	30	30
Firsts	29	—	29	29	29	29

EGGS.

This week has again been one of sharp fluctuations, as high as 57c being offered on the Exchange early this week, when arrivals were unusually light. Since then, however, supplies have been coming forward quite freely, Extras taking a sudden drop to 50c. Similar but slighter fluctuations are noted in pullets.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	49	—	52	53½	56	50
Selected Pullets	43	—	44	45	45	42

CHEESE.

The best lots of strawberries have again advanced, and Cape Cod cranberries are higher, with a very good demand. Some cranberries of the late red variety are now offered, bringing $10 to $10.50. The principal feature in the fruit market is the increasing firmness in apples, owing to the clean-up of fruit in the orchards of the Pajaro valley. From now on supplies will be taken from storage, and somewhat higher prices are asked for nearly all varieties. Notwithstanding the advance, the demand is heavier than before, and not only local stock but fairly large shipments from Oregon are moving off well. Pears are quiet, with little change. Some Oregon peaches are selling at fairly high prices, and the best local stock brings an advance. Figs find little demand at present, and cantaloupes also are quiet, the quality being rather poor. Grapes stand about as before, except for an advance in Tokays, and most descriptions are moving slowly.

Monterey cheese has again been marked up 1c. Flats are steady as last quoted, with Y. A.'s weak.

Fancy California Flats, per lb	17½	c
New Young Americas, fancy	17	c
Monterey or Jack Cheese	18	@19 c

Deciduous Fruit.

Strawberries, chest	$ 3.50	@ 7.00
Raspberries, chest	4.00	@ 7.50
Huckleberries, lb.	4	@ 9c
Cranberries, Coos Bay, box	2.25	@ 2.50
Cape Cod, bbl	9.00	@ 9.50
Apples: Baldwins	1.15	@ 1.50
Spitzenbergs	1.25	@ 1.75
Greenings	1.00	@ 1.25
Bellefluer	1.25	@ 1.75
Newtown Pippins	1.25	@ 1.55
Common	50	@ 75c
Pears, Bartlett, box	1.75	@ 2.25
Other varieties	75c	@ 1.75
Peaches, box	40	@ 65c
Oregon	85c	@ 1.00
Figs, double layer, drawer	85c	@ 1.00
Cantaloupes, River, lugs	75c	@ 1.25
Grapes: Seedless, lugs	1.40	@ 2.00
Malaga, crate	60	@ 85c
Muscat	45	@ 75c
Black, lugs	60	@ 75c
Tokay, lugs	75c	@ 1.00
Cornichon, crate	65	@ 75c
Isabella	75c	@ 1.25
Quinces, box	50c	@ 1.25
Pomegranates, box	50	@ 60c
Persimmons, box	75c	@ 1.25

Dried Fruits.

The dried fruit market in general shows little feature, business in the East being rather quiet in most lines. Some sales of prunes have been reported for Eastern shipment, and prices are very firmly held, but most Eastern buyers are operating in a conservative way, both as to spot and forward shipments. There has been some new export business, however, the demand being strongest for large sizes. Figs are now pretty closely cleaned up, and there are practically no apricots left in the country, though the demand is of a very limited nature. Peaches receive little attention in the larger consuming markets, but offerings are not excessive, and packers are firm in regard to prices. Country prices, however, are a little lower than they have been for ordinary stock, as some growers who have been holding show more disposition to sell. Packers who have secured raisins outside of the Association are endeavoring to break the market, offering seeded at ½c below the Association price, and buyers are accordingly inclined to hold off, though a slight advance was made a few days ago. The New York Journal of Commerce says:

"The advance of ½c a pound in the price of fancy seeded raisins announced by the representatives of the Associated company has failed to stimulate buying interest in this part of the country. The new price makes fancy seeded packed by the Associated 7¼c. No change was made in choice. Outside packers have raised their quotations to meet the higher prices of the big growers' company, but are still ½c under the quotations of the latter. Jobbers here are not disposed to make purchases.

"The destruction by fire of 1000 tons of California prunes in two San Jose packing houses is said to have created a decidedly stronger feeling on the Coast without causing any material advance in f.o.b. Coast quotations. Most if not all of the fruit that was destroyed was under contract with buyers, and, according to the terms of sale, the packers will have to replace 75% of the lost fruit. Therefore, both packers and buyers are expected to come into the market at once to make good the loss.

"Apricots and peaches are inactive, but there seems to be no pressure to sell, and prices are maintained on the previous basis of f.o.b. and spot quotations."

Evap. Apples, 1913	6½	@ 8 c
Apricots, 1913	10	@13 c
Figs, White	3	@ 4½c
Black	2½	@ 3½c
Calimyrna		4½c
Prunes, 4-size basis	5	@ 6 c
Peaches	4¼	@ 5 c
Pears	6	@ 7 c
Raisins (in sweatbox):		
Loose Muscatels		4 c
Thompson Seedless		4½c
Seedless Sultanas		4¼c

Citrus Fruits.

The first Eastern shipments of oranges for the 1913-14 season are due to start next week. Valencias from the past season were about all cleaned up with the shipments made this week. Prices have been very good and averaged on the Eastern auction from $3 up to $7.60 per box. Lemons also have brought good prices in the East on both California and European stock.

The orange crop to go East will first come from Tulare county, where the fruit is reported to be in fine condition and sizes good.

Total shipments of oranges from southern California for the past season to October 26 were 13,562 cars, as against 30,224 cars to same date last year. Manager G. Harold Powell is credited with the statement that the past season's output may be rated at 54% with an 82% return as compared with the preceding year.

At San Francisco, oranges are meeting with a little better demand at the old prices. Arrivals of new crop grapefruit are increasing, but the price is a little better than was received for the first lot, while old stock is still moving at the former prices. Arrivals of limes are larger than for some time past, causing a further decline, and ordinary lemons are also lower.

Oranges (per box):		
Valencias	$ 4.00	@ 6.00
Grapefruit, seedless	5.50	@ 6.00
New crop	4.50	@ 5.50
Lemons	3.50	@ 7.50
Limes	4.50	@ 5.50

Nuts, Honey, Hops, Etc.

NUTS.

The market shows little feature, aside from the delivery of stock on orders already booked and some additional buying of walnuts, which, in view of the short supply from other quarters, are in very fair demand. There are very few almonds

unsold, and there is considerable jobbing business in all nuts in preparation for the holidays.

Almonds, new crop—	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop—	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HOPS

Values stand about the same as last week, but business is quiet, with growers still holding for higher prices than the buyers are willing to pay at this time. Conditions, however, seem favorable for a good movement in the near future. Sonoma county growers are said to be holding for 27 to 30c, and it is estimated that about 14,000 bales are held there at this range, with 3000 bales in Mendocino county and 5000 in the Sacramento district.

1913 crop .....23@27c

HONEY.

The movement is very moderate at present, local requirements being pretty well cared for. Offerings, however, are not heavy, and values are steadily held.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Arrivals from producing districts are somewhat larger than they have been, but supplies in this market are closely held at about the same prices as before.

Light	30 @32 c
Dark	28 @30 c

Live Stock.

Values are well maintained on all lines in the local market, cattle and dressed beef remaining quite firm.

Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	8¼@ 8½c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4 @ 4¼c
Ewes	3¼@ 3½c
Lambs: Suckling	5¼@ 5¾c

DRESSED MEATS.

Steers	12¼@12¾c
Heifers	11½@12½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

While quite a lot of the fall clip has been sold, many growers are still holding in hope of better prices. So far the local buyers have taken but little interest in offerings, but with increasing activity in Eastern markets it is hoped that there will soon be more demand here.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

The only quotable change is an advance in kip, corresponding to the recent rise in other lines. There is a steady demand, and supplies have little chance to accumulate, offerings in the country being unusually light.

Heavy Steers, over 56 lbs.	15½c
Medium	15 c
Light Steers, under 48 lbs.	15 c
Heavy Cows, over 50 lbs.	15 c
Light Cows, 30 to 50 lbs.	16 c
Kip	15 @16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	26 @27 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.75
Medium	2.25
Small	1.00
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

A large lot of desirable stock is being put up at auction this week, including a number of attractive drafters from 1400 to 1700 pounds, as well as some good all-purpose horses. This is said to be the best offering that has appeared here for some time, and as buyers are taking more interest it is expected that a more satisfactory range of prices will be established.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	100@150
Wagon Horses, 1250 to 1350	100@125
Delivery Horses, 1050 to 1250	75@100
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

We want copies of the PACIFIC RURAL PRESS of Nov. 16, 1912, Jan. 18 and Sept. 13, 1913. If some reader has these copies we would consider it a favor if he would send them in. The College of Agriculture at Madison, Wis., has its files complete with the exception of these numbers and we wish to help them in this matter. The great demand for back files we have had during the past few months has about cleaned us of all old issues.

To the many thousands of new readers of the RURAL PRESS we wish to call the attention of our advertisers. No Western farm paper has such a reliable, business-like set of advertisers as has this journal. Many of the patrons have had their announcements in these columns for more than a score of years. Such houses must of necessity be of the very best in their line or they would not have stood the competitive strain for so long. When you buy advertised goods, as a rule you buy the best goods, and at a very moderate price. Advertisers always appreciate response to their announcements and will do all they can to make you a satisfied, permanent customer.

The great demand for the two books, "California Fruits" and "California Vegetables" still continues. In spite of dry seasons, dull times, low tariff and close money, people keep buying them. To the fruit grower or gardener there is no investment that will give better returns than one or both of these books.

A new book that will soon be published by the RURAL PRESS should fill a want long felt. The book will contain a thousand questions and replies that have appeared in our columns during the past few years. Prof. Wickson has been engaged in the work of revising these questions for several weeks, and he hopes to have the work ready for the printer very soon. The book will contain more than 250 pages, and the questions and answers will be divided into ten departments, such as agriculture, horticulture, livestock, dairy, veterinary, poultry, irrigation, insects, etc. Everyday problems, asked by our farmer readers and answered by Prof. Wickson and others, will make the book of such value that every farm home should have a copy ready for reference. Further announcement will be made shortly.

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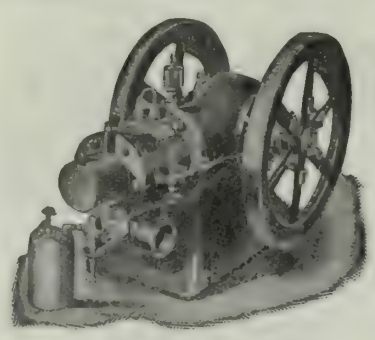

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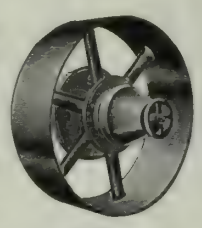

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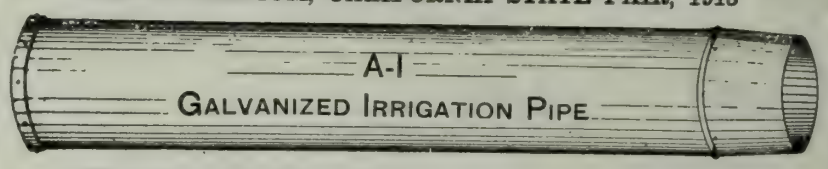

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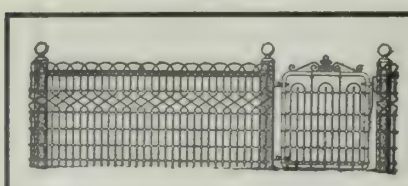

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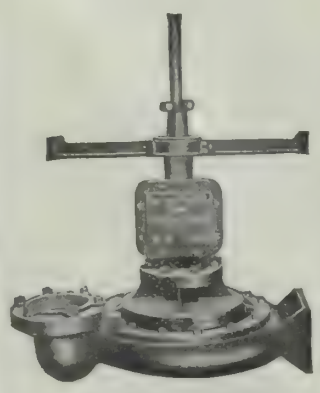

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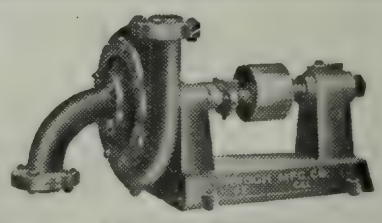

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Vol. LXXXVI. No. 19. SAN FRANCISCO, SATURDAY, NOVEMBER 8, 1913. F 7-1-14 hird Year.

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Future Markets and the Planting Season.

[BY THE ASSOCIATE EDITOR.]

Our deciduous fruits for the season have gone, and a new season for citrus shipments has begun. We are ready for the rains to come and make tree planting possible, and the starting point in preparing our orders is to figure up the commercial outlook for each of our leading fruits, in this way deciding how much of each future markets will take, how well these markets are likely to be supplied, judging from present planting tendencies, and, in short, to take stock of things from a business standpoint to see how we may best plan our increase of acreage.

Cherries.—No one who has good cherry land and the facilities for handling the crop need hesitate to plant cherries, for the future looks bright. The Pacific Coast produces a quality of cherry with which the East cannot compete and California cherries are produced in an abundance and at a time that give us a big advantage.

There is no danger of enough increase in production to materially affect conditions. The man in the early location that can ship heavily will make the best profits by far, but even cherries from mid-season or late districts are in enough demand from the canner to insure profitable average prices. The dying of old trees and the distinct limit to available locations for much more cherry planting appear to make overproduction impossible.

Each section has to make its own selection of varieties, but in general it can be said that the Black Tartarian and Royal Ann are the leading varieties, the proportion of the latter increasing as the season of ripening is later. A selection of several varieties is nearly always essential.

Apricots.—The man who can produce and handle apricots well can feel safe in planting as many as he wishes, largely for the same reason that cherry planting is safe—it is so hard to find satisfactory apricot land that is not already utilized that no great increase of planting is possible. The shipping of apricots from early districts has proven profitable, and the market for the dried fruit is susceptible to all the development that the supplies will justify. Europe takes large quantities of dried apricots and can take many more, while the domestic markets could take large amounts if they were available, the prices running high when justice is done the producer. It would be absolutely impossible, considering the fastidio[illegible] the tree for good fruiting locations, to overdo production. At the same time it is very doubtful if conditions will justify much planting where apricots do not do well. The condition of the market for canning apricots runs parallel to that for the dried fruit, except that it is much less important.

Nearly everywhere the Royal is the leading variety, or the Blenheim in parts of the bay counties.

Peaches.—Peaches can be and are grown so extensively nearly all over the state that it seems that further planting should proceed rather slowly for both shipping, canning and drying fruit. The shipping business by itself may be good one year, as it was this, on account of a light crop in the East. Another year they will have a full crop there and shipments will be reduced and much more fruit dried. Freight is so high that Califorina is at a considerable handicap as compared with Eastern peaches and irregular markets are rather unsatisfactory. The drying part is in such shape that even the late short crop and heavy shipments of fresh fruit could not pull prices up well. However, judged by peach troubles with only a fraction of present production, and the possibilities of the markets, which are in process of smoothing out, better things for freestone peaches can be expected.

Cling peaches a year or so ago were thought to be vastly over planted, but yet seem to be coming out nicely and similarly freestones can be expected to be consumed far more than at present. Prospects only call for moderate planting, which is all that will be done, and there is no doubt but what the peach industry in all lines will get on a reasonably firm footing before long. Muirs, Lovells and Elbertas are the standard for drying, the latter being the finest shipper and a general purpose peach after a fashion, with Tuscans and Phillips in the lead for clings.

Prunes.—Prunes are possibly our leading deciduous fruit and the industry is developing nicely, prices being very satisfactory the past few years and the market growing. Old orchards are not getting any better and the new acreage does not seem to be sufficient both to overcome the deterioration in the older orchards and give buyers more than they will care to handle. California prunes are steadily growing in reputation and popularity in Europe and there and here the public is becoming educated to good prices. There does not seem to be any great danger of overdoing the thing, or lowering prices below a fair cost of production, however matters develop. The Petite d'gen is still the standard variety, with the Imperial to be highly recommended wher-

(*Continued on Page 436.*)

Valley Orchards in the Picturesque Healdsburg Region.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Nov. 4, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.57	2.20	4.41	70	48
Red Bluff	1.54	1.54	2.66	72	50
Sacramento	1.18	1.19	1.58	70	50
San Francisco	1.59	1.67	1.76	66	52
San Jose	.62	.79	1.39	72	52
Fresno	.57	1.00	1.03	78	48
Independence	.02	2.54	1.01	70	38
San Luis Obispo	.64	1.62	1.94	68	48
Los Angeles	.12	.15	.88	72	50
San Diego	.26	.36	.57	70	56

The Week.

Great are sunspots, and Ricard is their prophet! Study the joyous figures of the rainy season's beginning which are given higher in this column and be glad for the spots on the sun. Then read the following which Father Ricard sent from the observatory at Santa Clara as the rain-prophecy for the current month:

"The dates of arrival of the November storms are November 1, 5, 8, 12, 15, 19, 25 and 29, and December 1. Any storm sufficiently distant from the next stays with us from one to three days. November will be wet and severe in the northwest, far less so in California. Watch for unusual warmth from November 22 to 29."

As we write on November 4, the schedule seems to be working well, for rain is falling, but whether it is the tail-end of the storm of November 1 (for since then the skies have not wholly cleared) or whether it is tomorrow's storm running ahead of the schedule, we cannot tell, for the drops have no date-stamp on them. It does not matter much, for they are all of about the same wetness, and that is the main thing. What we are apprehensive about is that Prophet Ricard may slip on the same plank from the realm of prophecy to that of science, from which the Oregon Weather Prophet fell to oblivion last week. For the report from the Santa Clara observatory, as printed in the common newspapers, has these specifications: "A storm is an air wave and the latter is analogous to a water wave; it has a trough and a crest, a starting point and a forward movement. The low is the trough and the high the crest. The rate of motion of a water wave can be measured. So is it with an air wave. Hence science can tell when and where it will arrive, especially where there is no obstacle as at sea. The land offers more difficulty."

This may be true enough, for all we know, but it is not related to anything; nor does the conclusion as to the ability of science to measure an air wave cover more than the Weather Service has been doing for years. This service has been doing very well in dogging the tracks of storms after they have sighted them somewhere. The trouble has been that the experts of the service have been so near-sighted that they could not discern anything beyond the stations to which their wires ran, or, more recently, to the locations of ships from which they received wireless messages. Father Ricard, we understand, believes he has secured points for calculation which are far beyond those used by others—even to the leopard-like face of the sun. That is all right; we hope he has, but we hope also he will refrain from giving explanations which do not get anywhere, for that is fatal to the art of prophecy and does not land one in the bosom of science. Just tell us the storms are coming, Father Ricard, give us the dates, "thar or tharabouts," if you like, but don't give us any more reasons until you are ready to connect up with something.

The Effect of the Rains.

It is hardly necessary to remark that the first great effect of the rain is in the heart of a man: faces, voices, the loosening of the fingers on the purse-strings—these things are so clear to the sight that words may dim them. The only exhortation which occurs to us as worth while is that we do not stand too long idly enjoying the fullness of the heart and the assurance of fullness of the pocket later. Such assurance can only come from action. Wherever the water has come adequately, field work should not be delayed. Fortunately, early in November is soon enough to begin for all winter growing crops, and there should be a full sowing of them. It is soon enough for tillage to catch the rains and to befit the land for spring seeding and planting or for summer-fallow. It is sure enough now to get into your possession the supplies and implements which your active year's campaign will require. Decide now where your seeds and trees are to be ordered from, and do not be caught in the rush of the belated people who never can decide to be ready. You will get better stuff and get it more easily than if you wait until the days are shorter and the roads worse. There has really been a wonderful volume of trade all through the waiting weeks which have passed, which means we have so many more people buying than a few years ago. From this onward there will be a rush in the trade. Get in at once, for crop conditions are assured. As goes November, so goes the year!

Beans and the Cost of High Living.

After all, is it not just possible that the militant way is the only effective way under certain conditions? We have no particular reference to the British suffragettes, and yet we cannot forget that they can point backward a thousand years in their own history to clear instances of effective militancy. When the barons held up King John they did not rely upon passing a set of resolutions, and Cromwell certainly did have an air of militancy about him. But these were mere men's affairs. Affairs of both sexes are not lacking. When William the Norman, great founder and prototype of the British aristocracy, was refused by a lady whom he wished to marry, he threw her down in the mud, spoiled her Paris gown and was accepted. Why, then, should not the women of this day turn the tables and rub the British premier in the mud on his golf links? Is it not a time-honored British way?

Nor are Americans so free from militancy that they can claim to be righteously shocked by it. The Boston tea-party was no pink affair of four o'clock. But Boston saw another sight when plate glass crashed at dead of night; the stoutest heart stood still of fright—policemen running rapidly!

"I'll throw a rock through a window every time I go into a Boston restaurant and get charged 15 cents for a plate with only forty-two baked beans on it. I know how many there were, because I counted them." Thus shrieked Joseph Mack to a policeman who arrested him for breaking a $50 window with a rock and was later sentenced to two months in the House of Correction for his militancy.

Our heart goes out to Joseph Mack in his lonely dungeon. He suffers for awakening the American people to the fact that they are being robbed of beans—the only safeguard of subsistence, in these days of retailers' exactions. No matter what extortions have come to light, people have been comforted by the consciousness that they could still live on baked beans. And now comes the demonstration that 42 small white beans, for which the California grower receives one-twelfth of a cent, are being sold in Boston for 15 cents— and increase of 18,000% is it? We can never be quite sure of our mathematics when our indignation is running high. When a hungry man cannot get fair trade in beans in Boston, what hope can we have of anything?

The Unyielding Grip of City Life.

We hope readers will not weary of our oft-mentioned conviction that the future of the country depends upon the holding of the country-born rather than upon acquisitions from the ranks of the city-bred. For this reason we have little faith in back-to-the-farm movement, and may even speak sometimes unkindly of organizations of good intent on the part of the organizers but with the impracticable intention of peopling the country with urban misfits. And we have this conviction even in California, where we have more successful farmers who have forsaken city life for farming, than in other States, in proportion to our population. It is not that we like city people less, but that we feel the responsibility of the country to upbuild itself, more. It is to secure this that the great effort now being made to render farm life more profitable and therefore more attractive and comfortable, is sound and rational. The city person, as a rule, is temperamentally less fitted for rural life and activities, than the rural person, though, of course, exceptions run both ways. But we never had an idea that it manifested itself so early in life, and those who like to think about such things will be interested in this story which comes across the world by wire this week:

"I was advised," writes a London father, to the Times probably, "that a change of air and surroundings would do a world of good for my nine-months baby, so I took her to a country village seven miles from a railway station.

"In London the child was always perfectly content watching from her perambulator the ceaseless tide of vehicles in the streets. The noise and excitement of it all seemed to please her. But the peace and quiet of the country village brought a reaction. The child became fretful and the silence of the country roads, the cows and sheep and other rural delights, understood to bring untold joys to the infantile mind, simply bored her. She worried and fretted until brought back to the clamor of the London streets.

"My doctor explained that these results are inevitable with children brought up in London. 'All such babies become blase.' he said, 'and this restless desire for excitement rarely vanishes with the passage of years.'"

The incident is interesting, but the significance rests rather in the generalization of the London doctor, that years rarely instill the tastes and satisfactions to which the country child is born. Therefore, we believe, the country must cling to its own for its own advancement.

The Railroads Win a Victory.

We are rather glad that the railways can find some little gleam amid the gloom which befalls them in the courts. Perhaps they would not run at all if everything went against them, and that would not be at all nice for those who do not own automobiles and those who do not like to walk. For example, the U. S. Supreme Court has decided this week that it has no right to interfere with the Interstate Commerce Commission's order reducing the freight rates on lemons from California to Atlantic seaboard points from $1.15 to $1. The Supreme Court holds that questions of the reasonableness of rates involving mere facts were for the Interstate Commerce Commission to pass on alone, and not for the courts to revise. Therefore the Interstate Commission had the right to make the ruling and there is nothing to tip it over. This is good law and good fact also. The increase of freight rates as soon as the tariff was raised on lemons, two or three years ago, was the worst piece of policy which a corporation ever indulged in, and we do not believe our California ends of transcontinental lines ever had any sympathy with it, except as forced into it by their wicked partners controlling distant connections. However, it is over now and our lemon growers have a clear fight with importers under the new tariff, which we have promised not to scold about at present.

But this is not the victory of the railroads from which we expect them to draw deep consolation in troublous times. H. B. Woolner of Ontario recently shipped 125 hives of bees to Ogden, but did not close the hive entrances, apparently, or else the bees found other holes not only in the hives but in the car also. The story is that the car was sidetracked at one point for some time, and when a Japanese cook living near the sidetrack beat a dinner gong to attract his yellow brothers, the bees left the car, and when the latter reached Ogden, there were no bees on board. Mr. Woolner sued the company for $600. The case has just been decided in favor of the road.

Australian Butter Assails Our Coast

A few weeks ago it was the problem of Siberian butter which rolled onto the wharves in New York; now we have something of the same kind ourselves. During the week a steamship brought the first large shipment of Australian butter, consisting of 3718 boxes. Of this number, 60 are to be forwarded on to Vancouver and 1500 to Seattle, leaving 2158 boxes for this port. Allowing 56 pounds to the cube, which is about the average weight of the Australian product, that would make 113,000 pounds for local consumption. It was reported that the receivers would ask 30½ or 31 cents per pound. This problem apparently arose in the northern coast cities first, for last week at the annual meeting of the State Dairymen's Association, in Tillamook, Oregon, the dairymen and creamery men were urged by leaders in the industry to reduce prices on dairy products in order to keep cheap butter from Australia and Siberia out of America, the latter having appeared in Northwest markets since the reduction of the tariff on these commodities. These things are too vexing to calmly discuss, so we allow each dairy reader his own choice of language. It is such a joy to be uncovered in the face of the world.

Queries and Replies.

Conditions for the Olive.

To the Editor: What conditions as to soil, location, that is, foothill or valley, water level, elevation, etc., are best suited to California olive culture? What counties of California are best adapted to olive culture in Sacramento and San Joaquin valleys? What is the minimum water supply, in miner's inches, for irrigation of the olive.—H. K., Fresno.

It is impossible to say that any particular prescription of soil, location, elevation or moisture conditions is best suited to olive growing. Olives are growing and producing profitably under quite a range of conditions of this kind, and the fruit from many locations and situations is most eagerly being sought for. These locations are found in many counties situated in different valleys. The point of greatest importance in selecting lands for olives is to find a demonstration of the successful growth and bearing of the trees, and these may be found in different geographical divisions of the State. The amount of water required for the olive cannot be definitely stated. It depends upon the local rainfall, character of the soil, situation with reference to rate of evaporation, and other matters which are, however, capable of solution for any locality on the basis of observation of what the trees are actually doing under the conditions of soil moisture, etc., which surround them in such locality. The behavior of the trees, as can be learned by observation, now that olives are so widely planted, is the best evidence to guide one in selection of land and in investment in this fruit.

Weed Seed and Irrigation Water

To the Editor: Enclosed please find a weed which is called in this section "sand bur." I have been unable to rid my place of it, because every irrigation brings new seed upon the land. Are there any laws, or have there been any associations formed to deal with a case of this kind—that is, to keep irrigation water clear of noxious weed seeds?—R. C. H., Modesto.

There is a law against allowing Johnson grass to grow along irrigation ditches, and there are other laws about weeds which might meet your needs. The execution of these laws is in the hands of the State horticultural authorities. You should bring the matter to the attention of your county horticultural commissioner, A. L. Rutherford, of Modesto.

Which Cow Shall He Buy.

To the Editor: I am going to keep four or five cows, sell cream and butter to customers in town, and feed the skimmilk to chickens and pigs. Which breed would be better for me to keep—Jersey or Holstein? From what I can glean by reading agricultural papers, bulletins, and books, the Jersey gives not so much milk but richer milk, while the Holstein gives more milk but not so rich, but in the aggregate yields just as much cream and more skimmilk. Am I right?—K., Fair Oaks.

You have the relative qualifications about right for the two breeds as a whole, but you still have to decide which qualification is best for you, considering your feed supply, land available, etc., Every man has to work that out for himself, and the beauty of the thing is that which ever breed he chooses he is pretty sure to permanently swear by. We would no more tell a man which cow to buy than to advise him which girl to marry. If he chooses for himself he will usually be content; if another chooses for him he will begin to doubt right away. It is that way with a man.

Age of Trees for Transplanting.

To the Editor: Is it advisable to plant trees two years old, and in what manner, if any, would they have to be treated differently from the planting of yearlings? Would they have to be irrigated as soon as planted?—F. K., Marysville.

Two year-old trees are not desirable for planting except in the case of oranges, olives, or walnuts, when such age may be desirable, if the trees are thrifty but not overgrown. For common deciduous fruits, yearlings are altogether better. When irrigation is necessary depends upon the moisture condition of the soil at and after planting. It does not depend upon the age of planting except that moisture has to be watched more carefully in the case of a tree which is older and larger, and is therefore given a greater shock by transplanting.

Price for Poultry Manure.

To the Editor: I write to ask you about the proper price for poultry manure free of sand and feathers, and put up in sacks. I find that a sack of the dry manure weighs about 60 pounds, and my idea was to run it through a fanning mill so as to blow out the feathers and screen the sand so as to leave the manure clear and clean. I can average about one sack per day, and as I have had the poultry running in the peach orchard for 20 years I well know the value of this class of manure. My neighbor's orchard adjoining mine is the same age and variety, but they look no more alike than a 'one lunger' looks like a prize fighter, and the same difference applies to the fruit and foliage.—W. C. M., Hanford.

The composition of hen manure (fresh) averages about 1% nitrogen, 0.80% phosphoric acid, and 0.40% potash; in other words, 20 pounds nitrogen per ton, 16 pounds phosphoric acid, and 8 pounds potash. This contains 55% moisture and when thoroughly dried would contain probably only about half as much, we should judge, which would make the amounts of plant foods just double what is stated above. At the values given by the State Fertilizer Control for these plant foods, the manure prepared as you describe might sell for about $10 per ton. In other words, similar materials in other forms could be purchased for about that price. The effect on plants, as you indicate, would frequently make its value much more than that, but the same thing would hold true for other fertilizers also without affecting their selling price.

Dry Land Pasture Plants.

To the Editor: If you have a book on re-seeding worn-out pasture lands for cattle, will you kindly mention it.—C. W., Marysville.

There is no book on re-seeding wild pasture lands in California. The growth on these pastures is chiefly of annuals, because extreme summer drought prevents the growth of perennials such as are grown in the East and in moister parts of the Coast.

The chief ways of improving California dry-land pastures is to guard against overstocking; to keep the stock off when the land is too wet, and to give the native plants a chance to seed toward spring—turning in the stock again later for dry feeding which does not interfere with the natural re-seeding of the land.

Of course, winter-growing annuals like bur clover, alfilerilla and wild oats will help the natural process of multiplying the same plants, which are among the best we have for winter growth and self-feeding. It is practically useless to undertake to establish perennial grasses on our dry uplands without irrigation.

FARMERS MADE TO ORDER IN GERMANY.

Germany spends $250,000,000 every year on its poor. Instead of decreasing, this expenditure increases year by year. But close to one's hand are the means of giving ample employment. There are thousands of square miles of waste land and moors in Germany only waiting the labor of men's hands to render them fruitful.

One example is given in German papers where forty unemployed Berliners have done wonders with a tract of land placed at their disposal by the state. They have cleared six acres of wood, and out of the thousands of trees cut down have manufactured simple furniture and fencing. The German Agricultural Society has given them manure, and with this they have turned twenty acres into good, arable land.

Future Markets and the Planting Season.

(*Continued on Page 433.*)

ever a suitable location can be found for it.

Plums.—The question of whether or not to plant plums and what variety, if any, to plant, is largely a question of locality and familiarity with the market, as a variety may meet an empty market and high prices when grown in one location and a dull market from another. Producers of shipping plums can feel reasonably satisfied with the outlook. Inexperienced growers usually had better go slow in making plantings, or know pretty definitely from shipper or canner what to expect from each variety. A number of leading varieties are: Clyman, Tragedy, Clymax, Burbank, Red June, Wickson, Abundance, Sugar, Diamond, Grand Duke and President and a few others that in places may prove better than a number of those named.

Apples.—Apples in California are different from nearly all of the other fruits named, in that the proportion of the whole crop produced in California is small, while most of the other fruits in quality or total production are limited to a very great extent to this State. Conditions elsewhere are therefore the deciding factor in California apple growing. The apple boom the whole country was experiencing came to an end in 1912, when the largely increased production knocked the bottom out of the market. There is still an immense acreage to come into bearing in the Northwest, and in the Eastern States more care than ever is being given apple orchards. Except under unusually favorable circumstances it would look wise for the prospective planter to wait for developments of a season or so before increasing his acreage materially. Details of variety can hardly be considered here.

Pears.—The closely related fruit, the pear, faces a distinctly different situation. In fact, if one has the right soil and location, pears are just about the best fruit that could be planted. The rest of the country cannot produce a pear that will come up to our Bartlett, and the blight has limited production so that both shipping, canning and drying fruit find a ready sale at remunerative prices with no prospects of production being overdone. Planting should only be done where the blight does not occur or can be easily held in check, as in coast or foothill counties, or where it is fought to a standstill, as in the wonderful Sacramento river districts. It is unnecessary to state that the only pear worth considering in our regular pear districts is the Bartlett, although there is also good money for those few who have late shipping varieties.

Almonds.—Possibly the heavy planting of almonds of the past few years if continued long enough, may give the market more than can be easily handled, but the outlook is entirely satisfactory. The marketing has been brought to a stage in which the nuts are sold readily at remunerative prices. California can compete with any other countries in acreage production of a fine quality of nut and the labor problem is as small as with any of our leading fruits. The public taste can be developed immensely and our present production is only a fraction of the total amount used, so we can grow to our total present consumption, and then some, without injuring the market.

The Nonpareil is the choice for a high-priced nut, and the Texas Prolific the best to go with it for pollinizing and for heavy production. The Ne Plus Ultra and IXL are of the first named class, but not as good as the Nonpareil and the Drake's Seedling of the Texas class, but by many is not considered as desirable as the latter.

Walnuts.—Almost everything said about almonds can be said about walnuts, except that the walnut acreage cannot be increased indefinitely, as the almond acreage, practically speaking, may be. This makes walnut planting still safer and the popularity of the last few years is apparently well deserved. There is a growing idea that walnuts are a coming crop in the cooler parts of the great central valley.

One reason for the increased popularity of the walnut is the great financial improvement by having the black walnut root and budding or grafting to selected varieties. The growing of seedling nuts is now out of the question, although the best named varieties for different locations has not been fully decided upon. The most promising single variety for every section is probably the Eureka, accompanied by Placentia Perfection and such varieties in the south as Franquette and some others in the north.

Citrus.—In orange production, the tariff, frosts and wonderful expansion of acreage north of the Tehachapi have left matters in some confusion. One is safe in saying, however, that oranges are and always will be a good proposition in suitable locations in the older citrus districts. In the north the industry has all the earmarks of a boom, which is enough to make a person go rather slow. The critical point here is related to frosts and the market for early oranges. It is extremely questionable if the early market can consume the oranges from the many thousand acres of young orchard planted or projected, or if it will be safe to leave many oranges on through the frosts. Possibly it will be safe to do so on groves in locations well situated for frost, and there need be no hesitation in planting either navels or valencias in such situations, though there should be a decided limit to the total acreage of northern valencias, and it is one of the most serious mistakes possible to plant a northern citrus grove in any but the most thermal location, seeing the large stretch of country where they can be grown.

Unless lemons are hurt more seriously by the tariff than now appears probable, lemon planting in suitable locations can be commended and will be safe financially, largely because the proper combination of climate, soil and moisture is so hard to find.

Olives.—The popularity the olive is experiencing should be enough to make one pause and think a bit, just as he should with northern oranges. The case in favor of heavy planting is briefly as follows: There is practically no competition from other States in production, the market for the ripe pickled olive is practically untouched, and the comparatively few persons who are familitr with them are enthusiastic over them, so that the whole country could consume many more times the present production. With more experience, also, the quality of the ripe pickled olive will be greatly improved. Prices are wonderful, could almost be cut in half and still be excellent, and there is oil-making to take frosted olives, small sizes or culls. If it ever happens that production overtakes consumption, there will be no collapse. The small sizes will simply go to the oil factory and the largest and best olives will continue to be made into pickles, adjusting supply and demand nicely. America produces but a small proportion of the oil consumed and will use a lot more as meat substitutes are required, while pure food laws protect against adulteration and inferior substitutes.

The case for the contrary consists in the fact that ripe olives are not a standard article of food, like bread, potatoes or prunes, and there is a limit to the amount that people will eat of a luxury, or of a relish. Furthermore, the available acreage is almost unlimited and planting will increase with increasing rapidity while profits continue. The olive industry is hopeless on an oil basis, as the grower and manufacturer could only break about even on oil with the old tariff on, and that tariff has been materially reduced this fall. It is cheap labor in Mediterranean countries that is our trouble in the matter of oil, and a most essential point is whether or not the Mediterranean grower and manufacturer will not see their opening in pickle manufacture. If they do and can make pickles from their oil olives with their cheap labor, it is hard to see where the California grower will land. We confess we cannot see the future on any point brought up on any side, and the progressive olive grower is welcome to make any decision he sees fit.

The Mission is still the favorite, with the Manzanillo partly sharing the popularity, both being deserving. The much larger Sevillano and Ascolano likewise deserve the high regard some growers have for them.

Fig Varieties.—Although fig planting is not being largely done, the outlook justifies considerable attention. Prices are low, but the production is sufficiently large and uniform to make fig growing profitable, nevertheless, while the fact also remains that the fig has been horribly neglected from a market standpoint and a few persons are only beginning to show what is possible to do in selling figs. This interest is promising for the grower, for the fig has such merits and can be sold so cheaply that there are possibilities for an unlimited increase in consumption at prices well above those now received. Once let figs take their place as a dried fruit beside apricots, peaches and prunes and they will be one of the best crops any man could grow. They have already begun to come into their own.

The variety with the best outlook is the Smyrna, or Calimyrna, with White Adriatic in some places the favorite, and the Black Mission always well thought of. In fact, there is a possibility that the Mission ultimately will be used as the root for the others and grown extensively for its own sake.

Miscellaneous.—Not much can be said here of minor fruits. The date industry in Imperial and Coachella should become one of California's leading industries. There are grounds for the belief that it is better to get select varieties or wait for them than to plant seedlings, but this is questioned.

The avocado prospects are not as bright as they were a year ago. The best that can be said in general is that where one has a frost favored location it is worth careful consideration.

Minor fruits, sub-tropical and otherwise, can hardly be dealt with.

Grapes.—A year ago the outlook was bad with both wine, table and raisin grapes. Developments in the raisin industry have put raisin growing on its feet, and no one should hesitate a minute in making raisin plantings in the raisin district of the San Joaquin, or seedless plantings in others places that are satisfactory.

The mid-season table grapes promise to be profitable when crops are short in the East, and not so profitable when Eastern yields are good. At all events, it is no mistake to wait and see whether the Viticultural Commission can prevent the shipment of under-ripe grapes before planting many more Malagas or any more Tokays. The outlook for late table grapes, especially owing to the development of shipments in sawdust, is much brighter.

The wine grape industry is in doubt. For coast county wine grapes it is as bright as could well be. For interior table grapes it is immeasurably better than a year ago, though the wineries are in the hands of a monopoly, which is not entirely pleasant for the producer. Prices there, however, promise to stay somewhere nearer a satisfactory level than they have been.

Summary.—But after all is said and done about individual varieties, the most essential point of all is to make a success from a producing standpoint. It is the mistake of a lifetime to figure that because some fruit pays, it can be grown anywhere. There is an awful lot of land in California and not a single tree or a vine should be planted except where frost conditions are all that could be desired, the soil admirably adapted to the variety and moisture and other conditions such as to give as uniform production of large crops of high quality fruit as can possibly be obtained. When a person has natural conditions such as can reasonably be obtained for fine fruit production and then lives up to his obligations as a farmer he can reasonably be sure of financial profits, whatever variety of fruit he happens to be growing.

UNSAFE TO LOCATE ON GENERALIZATIONS.

To the Editor: Can you give me any information about the land lying on the west side of the Sacramento valley, north of Winters for some miles? It is rolling and quite hilly in spots. Will it grow oranges, olives, figs, almonds, walnuts, or deciduous fruits commercially? Can you tell me anything about the water-supply, wells

or otherwise? What is your opinion of the soils of that section and their most suitable crops? How about alfalfa, with or without irrigation? I am inquiring with a view to locating there. I am told land is low priced, and if I can get a good jag of it cheap it looks to me like it would pay to get it and let what I cannot afford to put in trees lie in grain. H. T.

Sacramento.

[We can state in a general way that there are lands in the district which you mention which are capable of doing all the things you desire to attain. It is a district of the state which is capable of very great development providing water-supply can be secured, and this can undoubtedly be developed very economically by wells and pumping in many places in the district. We must add, however, that this general statement is not enough to warrant you in making any investment without giving particular attention to the exact locations which are offered to you. It is not safe in California to make selection upon the basis of a generalization. You must find the piece of land, understand its soil thoroughly, know exactly whence your water is to be developed, and then go to it energetically and intelligently, never expecting too much from absentee ownership and the service from those whom you may employ. Although water may not be needed for all the crops which you mention, a water-supply is the surety of wide adaptations and a protection against losses and disappointments through uncertainties of rainfall.—EDITOR.]

Excessive Summer Pruning of Vines.

To the Editor: I pruned my Thompson and Emperor vines hard in order to continue the cultivation; in general with shortage in yield of these vines in this community, I suffered also. An early frost affected the grapes of the Emperors very much. The laterals pruned did not again grow out much, and did not droop down the sides of the vine as prior to pruning, and conclude were therefore more susceptible to effect of the frost. Am I correct in my conclusions? And was the yield less on account of my summer pruning, or due to general conditions in this vicinity? A. J. H.

Fowler.

Comments by Prof. F. T. Bioletti.

To the Editor: Your correspondent, A. J. H., has evidently made a mistake which is very common in some California vineyards, namely, too heavy summer pruning. If his vines were weakened by lack of water and vine-hoppers, as was the case in many vineyards this year, he simply weakened them still more by cutting off their feeding organs, namely, the leaves. Summer pruning, with the idea of late cultivation, is a mistake. If the vines are growing so large and vigorous that the cultivators cannot get between them in the summer, it is the best proof possible that the vines are not suffering from lack of water and therefore are not in need of any extra cultivation. The only exceptions I know for this rule are in cases where it is necessary to do late summer irrigation, which of course must be followed by cultivation. I do not see how the summer pruning could make the vines more susceptible to frost unless it resulted in a new growth of shoots late in the season, which might happen with very vigorous vines. Summer pruning, where necessary, should be looked upon simply as a necessary evil. It nearly always does some harm and should only be done when it is a means of preventing some more serious harm. This matter was discussed in your issue of May 24 of this year.

BROOM CORN.

To the Editor: Please inform me about raising broom corn. How would it do on heavy adobe soil with irrigation, and is there a good demand for it, and what is the best time to plant it? Would you advise me to plant some? I believe there would be good money in it. O. F.

Richvale.

[Broom corn is grown like other sorghums, but it is more risky than they because you can sow sorghum (Egyptian, Kaffir, Milo, etc.) and be reasonably sure to get some forage and some grain, but unless you get fine broom corn you get nothing profitable. Broom corn is grown for the brush, and that must be long and tough or it is worthless. The crop also requires intelligent treatment such as breaking of the top to cure the brush, etc., and it must be expertly cut and baled after curing. Unless you are experienced in these things you are only safe in growing a few plants to experiment with. Broom corn is a dangerous crop to monkey with, both in the field and the market. The seed cannot be planted until all danger of frost is over next spring.—EDITOR.]

BLACK MILDEW OR MEASLES OF GRAPE VINES.

To the Editor: I have noticed in my Thompson Seedless vineyard that when the grapes of some vines are nearly full grown they show brown spots. Sometimes only part of a bunch is affected, and again the whole bunch may be. Whatever is the cause, it appears to affect the whole vine. The vines are wired and the growth of the vines get well mixed up, but the bad grapes may be close to another bunch which is all right. By following up, all the bad bunches are found to come from the same vine. Parties here tell me it is a black mildew and has no cure. The vines were sulphured twice with a machine. I have marked the bad vines by tying a white cloth on the stake. This will tell whether the trouble persists with the same vines. Can you suggest anything to do? W. J. P.

Sanger.

Comments by Prof. F. T. Bioletti.

To the Editor: The grape trouble described by your correspondent at Sanger is more or less common all over California. It has received the name of black mildew or black measles in various districts. Its cause has never been determined with certainty. In a few cases it appears to be due to sulphur burns on particularly susceptible varieties. Most cases, however, cannot be accounted for in this way. In all the cases which I have investigated, I have found some defect in the trunk of the vine. Usually the trunk has a dead or decayed region, sometimes in the middle and sometimes on one side of the trunk. It is quite common to find a vine affected on one side and not on the other. In such cases the decayed part of the trunk will be found on the affected side, indicating that the injury to the trunk is the cause of the spotting and drying up of the grapes. The disease is undoubtedly not infectious in the ordinary sense; that is, it does not spread from vine to vine, as your correspondent has noticed.

SHEEP IN THE FIG ORCHARD.

To the Editor: I have a White Adriatic fig orchard 20 years old. Since the second year after planting the orchard was neglected, not ever irrigated or even plowed. Strange to say, 80% of the trees lived and are now good size. A few years ago I commenced to put the orchard in shape, cutting out the suckers, pruning, cultivating, etc., and expect to have it all under irrigation next year. I have now come to the proposition of fertilization, and am considering running sheep in the orchards and feeding cut alfalfa. What would you consider the better method: dividing the orchard into lots of say 10 acres each by removable fence, and move the band every so often, or just turn the whole band loose in the orchard? How many sheep would it take to do a good job of fertilizing by either method you consider best, and would they damage the trees? SUBSCIRBER.

Oakland.

[You will have to be watchful about feeding sheep or swine in the fig orchard. We know that pigs will take to the bark very readily, and we should want to watch the sheep. Injury would be less likely to occur if the band had the whole orchard to range in, and we see no particular reason for your subdivision method, for the feed could be scattered from place to place more easily than the sheep could be fenced. The tramping of sheep upon a heavy soil would impact it so that decent cultivation would be practically impossible. On a sandy soil, of course, less injury would be apprehended. We have no data to compute the number of sheep necessary for the fertilization of a certain area. On the whole, we should theoretically favor the feeding of the sheep in a feed lot and the subsequent distribution of the accumulated manure, allowing them, however, a certain amount of liberty to clean up weeds, etc. It would, of course, depend upon time—more time less sheep, etc.—EDITOR.]

DOES NOT FAVOR THE NORTHFIELD.

To the Editor: I noticed a description of the Northfield Beauty apple by Mr. Etter of Humboldt county. I got some grafts from him of five different kinds of apples. My observation is that the Northfield Beauty is a good looking apple, in taste similar to Gravenstein, but not so juicy, has a tendency to become mealy very quickly, and if not picked at its proper stage becomes unfit for use; also being spoiled for drying, as it becomes very mealy and turns black inside. I would not plant the Northfield where the other Gravenstein could be raised. It may do better in other localities, but here it is no good. W. S.

Healdsburg.

[We referred this communication to Mr. Etter for his observations. He states that in all probability the objections to the Northfield are due entirely to hot spells this summer. In Humboldt county this affected a number of varieties of apples, some more than others, and Healdsburg, being in a much warmer location than southern Humboldt, would be affected very much more. The trouble was especially due to a hot spell following a period of cool weather. The Northfield in Humboldt county, where it has come into comparison with the Gravenstein, has been more highly appreciated. In regard to the troubles from late picking, in the early shipping districts where this variety would most likely be grown, this would seldom occur, owing to the profit being in getting the fruit off and to the market as soon as possible. Mr. Etter states that it stands early picking very well.—EDITOR.]

POPULARITY OF POMEGRANATES.

The pomegranate seems to be advancing toward the popularity guaranteed by the poets and novel writers who have worked with far Eastern materials, but it is advancing slowly, and planters should not be too greatly electrified.

It was reported from Porterville last week that shipping of pomegranates has closed for the season, a total of nine carloads having been sent out from this district this year. All the packing-house people report that the supply this year was by no means equal to the demand. The brisk market resulted in fine prices and the greater proportion of the fruit sent out netted around $2 for four-basket boxes, or at the rate of approximately $75 per ton net to the growers.

An especial feature was made this year by some of the packers of fancy packages and these contributed to the demand as well as the quality of the fruit.

Numbers of the ranchers of the Porterville district have signified their intention of increasing their acreage in this fruit next year.

Farm Homes in National Forests.

A miniature model of a Rocky Mountain national forest was exhibited by the Forest Service at the recent Dry Farming Congress at Tulsa, Oklahoma, October 22 to November 1. The model measured 5 by 6 feet, and on a scale to show an area of about four square miles, which is thus described:

The model contains a ranger station, a Government tree nursery, trails, roads, and bridges built by the Government for greater facility in travel, and particularly for the purpose of making every part of the forest accessible to fire-fighters and fire-fighting equipment. It has fire lookout towers; telephone lines, which enable the forest officers to give quick news of fires and to facilitate the transaction of other forest business; and fire lines along the mountain crests kept clear of inflammable material, so that fire may not easily pass from one part of the forest to another. Certain areas show homesteads developed under dry farming and under irrigation, and one shows a tract which is being logged under Government regulation.

The model is designed primarily to show the ways in which the National Forests are useful to farms within or near their boundaries.

It indicates that the farmer on the irrigated land has been able to secure his small patch of land within a National Forest because his strip was better suited to agriculture than to forest growth. He obtains all the wood he needs for his domestic use free and can purchase additional wood at a reasonable price from the Government. He grazes his milch cows on the forest range without cost, and there is available for his use abundant summer range where he may graze, at a small cost per head, sheep and cattle which he may carry over the winter on hay and fodder raised on his farm. Grazing cattle are shown on the model at about the size of a grain of rice, and sheep in proportion.

On the area devoted to dry farming, it is shown that tree growth protects the land from drying winds.

A typical power stream, from which water is also taken for irrigation, is shown running through the forest. Running water is used in the model and adds to the picturesqueness of the exhibit.

SWEET POTATOES IN NEVADA

To the Editor: I would like to try growing sweet potatoes, as they have been raised successfully in this valley. Please tell me how to plant and cultivate them. Also, will alkali in the soil prevent them growing? Irish potatoes and alfalfa do well.—F. C., Fallon.

[Sweet potatoes are not usually satisfactory if there is alkali present in the soil, but the success of Irish potatoes and alfalfa is a good sign. The way to grow them is to start sprouts cut from the old potatoes in a slow hot-bed. These sprouts are planted in the open after the ground becomes warm and the danger of frost is over, for sweet potatoes are very ten-

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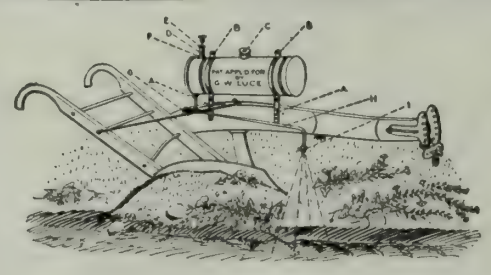

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der. You should then start the sprouts about a month before the date at which it would be safe to start them in the open. The sprouts are planted in rows sufficiently distant to cultivate say 2½ to 3 feet, and the ground hilled up pretty well, irrigation water being applied in the hollows between the rows.—EDITOR.

HOW A FARMER STARTED A REFORM.

In 1909 a farmer named E. Sundberg, who lived in Kennedy, Michigan, says the Mobile Register, received by express a casting for a piece of farm machinery. The casting was worth $2.50. The express charges were $32. The express company was immovable. Sundberg got very little satisfaction—then. He went to see a lawyer. He started proceedings to have the Interstate Commerce Commission look into the matter of express rates. The lawyer lawyered around for a while and the case was finally moved from Minneapolis, where it started, to New York. Ordinarily a change across the continent would have discouraged a litigant, but not Sundberg, who by this time was beginning to fight.

Sundberg went East with his lawyer. He saw Franklin K. Lane, one of the members of the Interstate Commerce Commission, and interested Mr. Lane. The latter caused subpoenas to be issued for the officials of the Wells-Fargo, Adams, United States, and other express companies, and saw that the documents were served. It was then shown on examination that the companies had a community of interest, the directorates were "interlocking," and the rates charged were confiscatory and unreasonable.

The inquiry was pursued further by the Interstate Commerce Commission. The result is that a few days ago Mr. Sundberg's $2.50 casting cost the three companies a revenue of $26,000,000 a year. The Interstate Commerce Commission has revised the tariffs of the companies and reduced them to the extent that the people will save that much annually. And here too is the parcel post. If the express companies had been less grasping for profits and more considerate of their patrons, the parcel post would hardly have materialized as it did.

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Phone—Fair Oaks 2520. R. 1, Pasadena, Cal.

The Longer Catechism.

To the Editor: Can I transplant large loganberry vines now and get a crop next year, or when should it be done? Can layers or tips of loganberries be put down now and get rooted plants for next spring?

Where can I get definite and detailed information regarding the propagation of olive trees? When should olive cuttings or tips be started, and how long a time is required to grow the trees ready for planting in orchard? Where can I get information regarding the propagation of roses, berry plants, spineless cactus, pansies, cabbage, sweet potato, tomato plants?

Can strawberries be put out now and get crop next year, or when is best time to plant them?

Will "gyp corn," or milo maize, or sorghum fodder poison stock under certain conditions? What are those conditions and how prevent it? What is best stage of the head to cut milo maize, gyp corn, or sorghum for fodder? Will frosts injure such crops, if left uncut in fields, sufficiently to spoil them for feeding grain or fodder?

What is best grain to plant for growing cover crop in orange orchard without irrigation and when should it be planted?

What kind of lime is usually used for heavy soil; how much should be used per acre, and when should it be applied and how? How much should it cost per 100 pounds?

Do you recommend the use of nitrate of soda as a crop stimulant, or to boost orange trees that are somewhat backward? How should it be applied and when, and how much per acre for grain crop or hay, and how much per tree for a small three-year-old orange tree? How close to tree should it be put? How much should it cost per 100 pounds?

Until a year ago I "ran" a newspaper in Nebraska, so I know how easy it is for editors to answer fool questions, and I will appreciate the information you give me very much. I did very well in the newspaper business, but I'm beginning to think I'll never know enough to farm. It takes time and money to learn by experience; of course, one can get much information from one's neighbors, but I find the average rancher who "knows it all," knows too much that "hain't so," as Josh Billings says. I depend on the RURAL PRESS a great deal, and find it very satisfactory.

One other question and I'll quit you for this time: Do you know of a thorough treatise on tree pruning, especially orange trees? J. G. JESSUP.

Lindsay, Cal.

The above is a personal letter, but any editor who writes such a letter knows well enough he must run the risk of having "copy" made of his stuff.

We cannot speak from experience in transplanting large loganberries. We would expect, however, to maintain their life and to get some fruit next year by careful transplanting, cutting away all the old wood and shortening by about one-half the canes which grew during last summer. Transplanting should be done as soon as the ground becomes sufficiently moist and the plant as nearly dormant as possible. Layers or tips cannot be secured now, but are usually best grown during the growing season of the plant—during next spring and early summer. Of course, if the soil temperature during the winter should be sufficiently high, rooting will take place to some extent, for it depends upon suitable conditions of heat and moisture combined.

Full information concerning growing olives and other fruits from cuttings or from seed, and the cultivation of common vegetables are given in detail in our books, "California Fruits" and "California Vegetables." There is no book giving all the details of the growing of flowering plants, written specially for California conditions. Our floral books are largely written from the esthetic and impressionistic points of view.

Strawberries can be planted out now if soil moisture is sufficient and enduring until the plants become rooted. They are, however, better transplanted early in the autumn or in the springtime.

Sorghums generally contain poison in their rankest growth, generally the growth that comes after cutting. Such growth becomes safe if cut and wilted before feeding. A very little frost will kill all sorghum plants and reduce the feeding value of the forage therefrom. Probably for highest feeding value, dry, the plants should be cut while the seed is in the milk.

The best grain for cover crop is rye, because it grows with a maximum of moisture and at low temperatures, therefore makes quick winter growth, but un-

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The winter rains will cause the phosphoric acid to be thoroughly distributed throughout the soil, and this means that the available plant food will help the fruiting next year wonderfully.
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As a fertilizer contains Nitrogen, Phosphoric Acid, Potash, creates Humus, is a soil corrector and will assimilate any fertilizing element that may be contained in the soil
To insure prompt delivery, book your order at once. Write or call on us.
PACIFIC MANURE AND FERTILIZER CO.,
429 Davis Street, San Francisco, Cal.

less you are sure of abundant moisture for the orange trees, nothing should be grown between them.

Common builders' lime, or the air-slaked form thereof, is most available for improving heavy soils and can be used at the rate of one thousand pounds per acre and repeated. The best time to apply is at the beginning of the rainy season, and it can be spread from a wagon, being careful to keep on the windward side. Prices must be had from advertising dealers.

Nitrate of soda is valuable for the purpose which you mention, but care must be had not to use it in excess, and it should be evenly scattered and not very near to the trees. About 200 pounds to the acre thus applied is a safe quantity. You must obtain prices from dealers.

Full details for pruning various fruit trees are given in the book "California Fruits," to which allusion has been made above.

ABOUT ALMONDS AND OLIVES.

To the Editor: Please give me the correct time of the year to prune almond trees; also when to sow bitter almond nuts to use in raising trees. Also when to prune olive trees. My olives are decreasing in size and quantity from year to year, yet they are in good shape and look healthy.—B., Burson.

[You can prune almond trees at any time during the dormant season; that is, after the leaves have fallen until they come again. Probably no time would be better than the present, for if all the leaves have not yet fallen they have still discharged their function for the year.

Bitter almonds can be planted now if the ground is moist enough to germinate them and to encourage the rooting of the seedling. Care should be taken, however, not to plant in a place where winter water is likely to stand. On the whole, in order to get continuous moisture and suitable temperature, it is usually better to keep the nuts in a box of moist but not wet sand until the outside ground begins to warm up after the coldest weather in January.

Olive trees may be pruned at almost any time. Heavy pruning, however, had better be done early in the spring, just about the time that the new growth is commencing. As for the bearing of your older trees, if you are sure that they receive moisture enough to be thrifty, the use of fertilizers to stimulate their vigor would be desirable. The application of farmyard manure now, to be leached out by the rains and subsequently plowed into the ground, would be a satisfactory treatment. Lacking farmyard manure, a "complete commercial fertilizer" should be used, as the dealers advertising in our columns will advise you if you correspond with them.—EDITOR.]

WINTER RHUBARB IN THE SAN JOAQUIN.

To the Editor: I am interested in the culture of rhubarb and would like to have some information as to the success of Winter Rhubarb Giant strains from any growers in the vicinity of Stockton or Modesto.—Subscriber, San Jose.

[We understand these varieties are performing satisfactorily in that district, but we have no specific accounts of results. Growers are invited to state their experience with the plants, as "Subscriber" requests.—EDITOR.]

BISMARCK APPLE AND DWARF BARTLETTS.

To the Editor: I would like to know the experience of your California readers with the Bismarck apple, also with dwarf apple trees and Bartlett pears on quince root. Are they satisfactory as to vigor, productiveness, and quality of fruit? I should not think of using them except as fillers.—A Subscriber, Upland.

[There is very little experience with the Bismarck and with dwarf pears to be had in this State, and it would be interesting to have the results of trials for publication.—EDITOR.]

The Fruit Growers' Co-operative Association of Australia is to install a pulping plant to deal with medium-grade tomatoes and stone fruits that cannot be sold fresh. A satisfactory offer is said to have been secured for all the pulp that can be sold.

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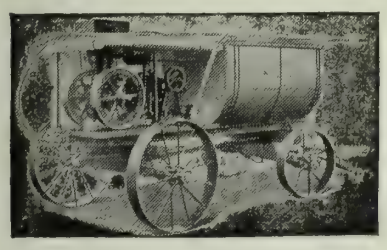

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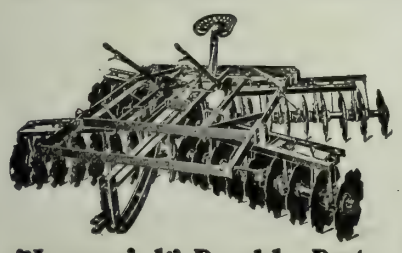

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IT IS THE BEST
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about your plans. Our advice and suggestions will be valuable to you. We know what is best adapted to your locality and can intelligently counsel with you about what and when to plant for best results.

If you are figuring on setting out any ORNAMENTAL TREES, SHRUBS, VINES, EVERGREENS, PALMS, etc., you will do well to get in touch with us. We have a magnificent stock, including a splendid assortment of Hardy Field Grown Roses.

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345 S. Main St., Los Angeles, Cal.

AGRICULTURAL REVIEW.

Fruit Notes.

The California Date Farming Co. expects 250 to 600 pounds of dates from each of its Deglet Noor date trees, this being the second year in bearing.

The Chico Cured Fruit Association is packing and shipping about a car of prunes and peaches a day.

At a conference in Fresno recently between J. P. Dargitz, manager of the California Cured Fruit Exchange, and peach growers interested in the formation of a California peach company on the lines of the Associated Raisin Co., it was decided to go ahead with the peach company, but to co-operate with the Cured Fruit Exchange in marketing the products.

George Rose, a rancher near Woodville, Tulare county, is to greatly increase his olive acreage.

The apple season is closing in the Gold Ridge of Sonoma county. Although the crop is moderate and worms were bad, the season has been quite satisfactory financially.

Practically all of the prunes in the Napa valley have been sold by the growers. The crop was far below normal.

The citrus fruit men in Butte county state that the fruit this year is coloring a great deal slower than usual, and as a consequence the shipping season is much later.

A meeting of the committee of the Growers' Dried Fruit Co. was held at Fresno, last week, to take steps for the solicitation of stock subscriptions.

From 600 to 700 sacks of walnuts are being received at the Richland Walnut Association's packing-house, three times a week.

The fruit-shipping season at Vacaville closed last week, 747 cars having been shipped from that section this year, as against 781 cars last year.

The orange-picking season started at Palermo, Butte county, this week, and those in a position to know state that this year's crop will not be so large as that of last year.

The harvesting of the olive crop is now on at Corning, Tehama county, and while the crop is not so large as last year, the quality and prices are very satisfactory. The olive growers' exchange is paying $190 per ton for the entire run delivered, but some growers sold on the trees for $150.

A 30-acre tract has been leased by Hughson parties in Stanislaus county which will be used for nursery purposes.

C. H. Schmidt, of Selma, Fresno county, realized $7,125 from nine acres of Tuscan cling peaches which were sold to the cannery this year.

The Sebastopol apple packing season closed this week and is considered one of the best years for some time, as prices held up well until the close and were not seriously affected by Northern-grown fruit as it is some years.

The lemon rate case was decided last week in the Supreme Court at Washington, in favor of the shippers. The rate of $1 per hundred freight on lemons from California to Eastern markets was decided as fair and compensatory as against the $1.15 rate asked by the railroads.

Four hundred tons of prunes were burned at the Frank Fruit Packing House near San Jose last week.

A letter from a walnut grower of Ventura county states that the demand for walnuts is far in excess of the supply. That at the price of 16c for No. 1 Soft-shells, orders have been received for nearly eight times his supply. From other sources it is learned that the first estimate of 600 to 700 cars of walnuts was too low; that now the traffic men claim their roads will ship over 800 cars.

Field Crops.

Seeding has begun on the West Side in Stanislaus and Merced counties, and the largest acreage will be planted to grain that has gone in for a number of years.

J. H. McKnight, of the Biggs section, has purchased 1,100 acres near Nelson which he will plant to hay and grain and partly to rice also.

Owners of land in the Oakdale district

It Costs MORE to Produce POOR Fruit Than GOOD Fruit

IT COSTS NOTHING *to know the most efficient method for protecting your orchard from insect pests and fungous diseases.*

IN THE WEST, *fruit varieties in different localities differ in their susceptibility to diseases. Special directions for control, on account of different climatic and soil conditions, are absolutely necessary to obtain best results.*

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S. W. FOSTER, *former Field Entomologist, United States Department of Agriculture, is in charge of this bureau. Many years of special study of orchard problems under Western conditions, make his advice to fruit growers absolutely reliable.*

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Spray peach and apple trees NOW to prevent blight and gummosis next spring. Orchard Brand Bordeaux Mixture, paste, is made from pure chemicals in concentrated form—ready for diluting in spray tank.

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If you can't find it convenient to come to Pomona, write us stating your difficulties and we will be glad to advise with you. Our 1913-1914 pump catalogue No. 52 P is now ready for distribution. Write for a copy

POMONA MFG. CO.

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Or see our San Joaquin Valley Agents:
PEASE-BUNDY-TAYLOR CO., Porterville.

that is suitable for rice growing are considering making large plantings next year.

The Tweed Ranch & Land Co., of Willows, expects to plant 50 acres of rice next year.

A 2,000-sack crop of Milo maize was harvested by H. Boone, of Tipton, from an 80-acre field.

A car shortage is reported in the Biggs section by the rice growers, who are through harvesting and are now ready to ship.

According to advices given out by the Southern Pacific railroad, the rice crop in the Sacramento valley will amount to 7500 tons this year.

Five carloads of celery are being shipped daily from Contra Costa county by the California Vegetable Union to Eastern points. Although the season is earlier than usual, the quality is fine, and it is expected to bring good prices.

G. K. Aoki, one of the largest Japanese land-holders in the State, expects that his countrymen will invade the rice-growing section in Butte county in the near future

The sugar beet factory at Hamilton City, Butte county, has closed for an indefinite period, due, it is said, to the recent tariff revision on sugar. The crop on the Moreland, Wilson, and Pheland ranches this year was excellent, but the company expects to plant 10,000 acres to barley on its holdings the coming winter.

More pumping plants than ever before are being put in around Porterville.

Grape Notes.

The first straight car of Emperors shipped from Fresno sold in New York for $1,750.

The wineries in the Fresno district have about all closed for the season. The ruling price was $10 per ton, and for second crop Muscats $10 to $12.

The Forestville winery, Sonoma county, crushed $40,000 worth of grapes this year.

Free selling of raisins by the Associated Raisin Co. is being done. Offers of outside packers to undersell appear to be practically ignored by the trade, especially since there are almost no outside goods to sell, despite the offers.

As half of the Emperor grape crop has been harvested, it is expected that the fruit-shipping season will end in the San Joaquin valley in about two weeks. Prices this year have usually been much better than those of last year.

The vintage season in the Napa district has just closed, having been one of the most successful for several years, as the season has been favorable for picking and the average price has been $23.

Miscellaneous.

It is expected that the poultry show to be held at Coalinga, December 18, 19, and 20, will bring out many entries, as there are already 103 birds entered.

Work was started last wek on a large well on the ranch owned by the Sierra Vista Winery Co., near Chowchilla. Most of the tract will be planted to alfalfa.

L. W. Hill, a large fruit-grower of Oregon, has purchased the Frank Petray place in Sonoma county and will build on it next year.

Edwin Duryea, Jr., has resigned as chief engineer of the South San Joaquin Irrigation district, his resignation having gone into effect November 1.

T. F. Laugenour, of Sutter county, recently sold 357 acres of land to J. C. Carly, of Sacramento.

C. E. Byrns, of Woodland, has purchased 640 acres of land near Gridley and will plant it to rice next year.

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COMPARE THIS WITH

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1 gallon tins	$ 1.50
5 gallon tins	6.00
55 gallon drums	60.50

If your dealer does not have KILMOL, if he does not know its advantages over other methods—then for your own protection, send us his name, and we will see that you are supplied, and we will send you complete and convincing information regarding KILMOL. Address today

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$1.00 worth of Kilmol today is worth $10.00 worth of crops tomorrow.

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Science has brought many things to the farmers and horticulturists who will accept them, but nothing of as great importance as the easy and inexpensive introduction into the soil of nitrogen-gathering bacteria.

FARMOGERM

is the trade name of the most practical and reliable culture of bacteria, and its application will not only supply deficient soil with nitrogen, but increase the tonnage of the crops a hundredfold and more.

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Drawn from photographs of Alfalfa in adjoining fields.

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VETCHES BEANS FENUGREEK
SWEET PEAS ALL OTHER LEGUMES

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also a fine stock of

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and invite your inspection and inquiries.

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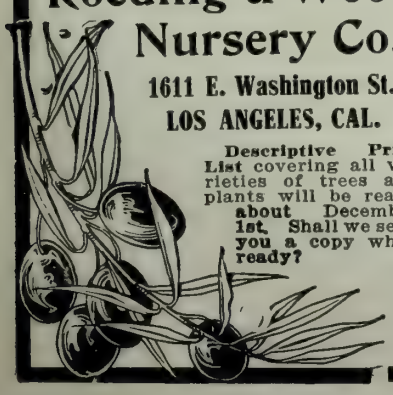

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Development at the Hopland Stock Farm.

[By the Associate Editor.]

When a wealthy man takes up some special branch of farming, poultry is the last thing that would be expected, that is, on a large scale and as a straight commercial proposition. The poultry plant at the Hopland Stock Farm is therefore unusual, as being the outstanding feature of the place despite the name of the ranch. The plant is also noteworthy in its size, completeness and the scope of the operations undertaken. It is not only well planned, but to all appearances is as well and efficiently conducted as any plant well could be, and it is said as a financial venture to be a wonderful success, paying better dividends than any other branch of live stock could, if poultry can be called live stock. And it should be clearly understood that the plant is merely a commercial proposition, not a hobby or a fancy breeding plant. It is also probably the largest poultry plant in California, and one of the largest in the whole country. Practically every branch of poultry raising is conducted within its boundaries.

The Hopland Stock Farm is owned by A. W. Foster, formerly president of the Northwestern Pacific railroad, which runs through the northern coast counties and within a mile of the ranch; regent of the University of California and holder of other public offices. It was started as a summer home, and later racing stables were established there. When the racing game died, the horses were disposed of, and two years ago the poultry plant was established on the site of the track, and now other branches of purebred stock are being established also, including Short-horn cattle, Shropshire sheep, and Berkshire hogs. There are also a few purebred Holsteins and about 80 head of Hungarian ponies, which have been kept on the place for many years. This herd is the only one of the breed in California. The animals are nearly as small as Shetland ponies, some of them smaller, hardy, graceful and fine travelers. They are one of the most interesting and important features of the place. Visitors at the State Fair will be acquainted with a few of these.

The ranch itself occupies 2200 acres of land one mile east of Hopland station in southern Mendocino county. Of these, 500 acres and over is rich bottom land in the Russian river valley, the other is hill land, range for sheep, cattle and horses.

A son, Robert N. Foster, has been manager of the place for several years, although the father, A. W. Foster, is the ultimate authority.

Size and Scope.—An idea of the size of the plant can be gained by the fact that 8600 laying hens are kept, and not a mongrel or crossbred in the lot. Eggs are produced for the market or to sell to hatcheries or to be hatched on the place. Day-old chicks, partly-grown fowls or laying hens are all sold, either fancy or commercial stock. Everything done on any poultry plant is done here. A very important, almost a fundamental, part of the work is in the development of an egg-laying strain.

And, as was indicated, not only were these ideas developed properly and suitable equipment provided, but from the standpoint of achievement the results have been everything that could be hoped for, both in the quality of the poultry and for financial returns. It is few large plants that obtain such good results.

Practically all of the fowls are single comb White Leghorns, the commercial fowl of California. For a time a number of other breeds were also kept, but these have been discarded, although White Plymouth Rocks will be raised as the breed it is believed will be best suited to the California farmer as an all-round or general purpose fowl. These are only a drop in the bucket in number as compared with the Leghorns, although all that are kept are of the best of breeding.

Two other kinds of fowls are also kept as being required by circumstances, Toulouse geese and Bronze Turkeys. A flock of geese is kept as a kind of watch dog. They wander loose at their own sweet will and no marauder with two or four feet can come near them without the ranch being aroused. The turkeys have the freedom of the whole ranch, seldom coming near the poultry plant, however, cleaning out grasshoppers and living at slight expense. Both geese and turkeys are purebred and only the highest class males are permitted to run in the flocks and both class of fowls are quite profitable.

The Poultry System.—While all necessary care is given to every branch of poultry raising, the natural place to start is with the breeding. The mothers, or at least grandmothers of all the hens on the place, are not only of pure breeding and up to standard in form, but are trapnested the whole of the first year as pullets. There is one man looking after the trapnesting all the time, and he has enough to do, though not so much that he cannot do it well. These pullet eggs are not used for hatching, but the fowls that lay up to requirements are kept to provide eggs the next year, being mated with birds from high laying hens.

There are not enough hens from these eggs to supply the whole plant, but as many as are raised are kept and all hens whose eggs are used for hatching are mated to roosters from trapnested mothers. The best pullets are trapnested the following year, so there are continued generations of hens with egg records, while all the roosters in the plant and many of the hens used in breeding commercial fowls are from egg-laying strains. There is no doubt but what a large part of the vitality of the fowls on the plant comes from this breeding work.

As an illustration of efficiency, it may be said that the average egg production from the rank and file last year, not including trapnested birds, was more than 150 eggs per fowl.

Young Stock.—There is a capacity for 50,000 fowls raised per year, from January to July, with 40,000 as the general working ideal. After the chickens are taken from the incubators they are removed to the brooder houses, to be kept for six weeks. These brooder houses have large yards on the south side, wire covered, so that the chickens can get plenty of fresh air and develop hardiness. At the end of six weeks they are removed to colony houses, which are located in yards about 10 ft. wide by 30 deep. Brooders are supplied in these houses if desired so that whenever there is a rush with the incubators the chickens can be removed from the brooder houses in three weeks and placed in the colony houses. As a matter of fact, this fall while only a few chickens were being hatched, they were put in the colony houses direct from the incubators. These yards are seeded to rape and grass to give the chickens green food to eat and nice moist ground to work in. It is a rule in every part of the plant to give lots of space to the fowls, in the brooder, colony houses and laying houses and yards. Not a small part of the success and the vitality of the fowls evidently comes from this.

As an illustration of the success with the chicks, there were about 65 to 85 little chickens in each of the colony houses about the middle of October and the card record on each gate showed perhaps one chicken dead, perhaps four, sometimes none for chickens about a month or six weeks old. And this at a time of the year when baby chicks hatch with the least vitality.

And a noteworthy feature was that a good proportion of the little cockerels, hardly as large as a robin, were marching around with combs that in proportion to their size would not do discredit to many yearling roosters. It is almost ridiculous to see how mature they look, about the same as a two year old in a frock coat and a stove pipe hat. There is no difficulty here in separating the cockerels from the pullets at ten weeks old, the cockerels going to fattening crates, or if from trapnested stock and up to specification, to free range.

At ten weeks the pullets also go out to free range in barley stubble or pasture, where they have all out of doors to roam in. They remain there until about laying age. It is perfectly safe to say that a large part of their vitality is due to having this free range. They are all kept in one big field, but in numerous houses, where not too many are in each house and there is no overcrowding.

In the breeding pens which contain about 175 laying hens one rooster is kept to 15 hens, the roosters being removed every 30 days and others being put in their place, giving for the season one rooster to seven or eight hens. This is done to insure fertility and vitality. Even fewer roosters are used with heavy breeds.

Houses.—The laying hens are in two long series of houses facing south, yards being both in front and rear. One row is of two story houses, another of the regular one-story open-front houses. Nine square feet of house space is given per hen, a large amount, and the yards are large in proportion.

The two story houses are for breeding birds and only a few hens, as stated before, are kept in a yard. The one story houses are larger and are for the production of market eggs only. They are more on the line of the modern open front houses with 500 to 1000 hens in each, except that fewer hens than usual are kept in proportion to the space given. In the two story houses where breeding hens only are kept, the litter is kept on the ground floor and the nests and dust boxes on the upper story, which is entered by an incline on the outside. Two stories make more work than a single story house, but the extra space and other benefits justify the extra trouble when the eggs are used for hatching.

Feeding Methods.—All feed is prepared on the place and all except green stuff purchased. There is a mill where materials are ground and mixed. This is somewhat cheaper than buying prepared foods, but the main idea is to get just the combination of food materials desired. The poultry superintendent knows just what is needed at every period of the year or at any age of fowl and exactly the right proportion of the different food materials can be given. The mash itself and other foods given are prepared and distributed from a small building at the center of the plant.

The feeding schedule is as follows: At five o'clock in the morning a feeding of grain is given, at nine o'clock greens, at eleven o'clock a wet mash, at three, more greens, and at five o'clock, a heavy feed of grain as a scratching feed. This keeps the fowls busy eating or digesting feeds all the time.

Everybody has heard the so-called joke of the poultryman that had his hen houses lighted so that he could light up and darken the plant several times in 24 hours and fool the hens into laying several times the regular number of eggs. There is the suggestion of this plan here, but in heal, practical fashion. The houses are all electric lighted and when the daylight is too slow in coming in fall and winter the fowls are made to believe that day has come at 5 o'clock anyway by the lights, so they get up and eat a hearty breakfast. is simply to keep their digestions busy longer than they otherwise would be in winter, and in practice it is claimed that ten per cent more eggs are secured in winter than would be if natural light only was made use of. Eggs are high in winter, so the plan more than pays.

Alfalfa chopped fine is the green feed morning and afternoon most of the year. Kale is also raised and the yards planted to green stuff. There are two yards to each house, one in front and one in the rear. While there is moisture these yards are alternated, one being eaten down while growth is going on in the other.

Wet mash is considered preferable to dry mash; that is kept before the fowls all the time, largely because it is almost impossible to get a feeder where much of the mash is not wasted. By the five feedings of one thing or another per day the hens get all they can look after and waste is kept down. No more is fed of anything at one time than will be cleaned up properly.

It is impossible to go into any detail on methods or equipment and the leading features alone are required to show methods of management and to indicate why the plant is a decided success, which it is. Progress has been admirable and continued breeding with such vitality and egg production as is being secured should ultimately result in a decided improvement in the quality of the commercial White Leghorns. The management always keeps a standing invitation out to poultrymen interested who would care to visit the ranch, and anybody wishing details could get them better by a visit than by any written description.

Other Live Stock.—Although poultry is the leading feature of the ranch, the term "Hopland Stock Farm" is justified in other ways. The Hungarian ponies which were spoken of before have long been a leading feature of the place and are continually growing in note and popularity.

A purebred Holstein dairy was started a number of years ago, but has been reduced in size until only enough stock were kept to supply the ranch with milk, cream and butter. Now that a start has been made in building up the ranch as a stock farm again, the Holsteins will be increased in number and a fine young bull from the University Farm at Davis was recently secured to head the herd. There is a good nucleus for a herd, as the best of the original lot of cows was retained.

Berkshires were bought at the same time with the Holsteins, and as there was plenty of alfalfa, acorns, fruit, scraps, from the house, some skimmilk, etc., a small but high-class bunch of these has been kept.

This spring a bunch of 30 of the best Shropshire ewes that could be secured in the East was brought out and one of the best bucks. Likewise there is a herd of purebred Short-horns as the start of a larger herd. E. K. Brown, one of the best known and most experienced herdsmen on the coast, is in charge of the cattle, sheep and hogs. As a matter of fact, Mr. Foster for years has kept some of the best beef cattle and sheep in the State on his Lakeville ranch in Sonoma county, and the development of this line of work at Hopland is more of a beginning of that kind of work at the place than anything new for the owner.

It is a fine situation for a stock farm, as the bottom land is some of the richest in California. About 100 acres is already in alfalfa, irrigated by pumping from the Russian river. More will be put in as time goes on. There is always a good rainfall and lots of natural pasture, while there is the hill land, partly wooded, to provide a fine natural range.

The poultry plant is now the most interesting feature, but other things are growing to it, and it is only a question of time, judging by present progress, before this will be one of the largest and finest stock farms in California in all lines, horses, beef and dairy cattle, sheep, hogs and poultry.

Handling the Dairy Bull.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

"Don't get close to that bull in the corral," is a common expression of many dairymen, and has been for so long a time that almost everyone has acquired the habit of sidestepping this king of the dairy herd.

As everyone knows, there are good and bad bulls, but we are always willing to take the safe course.

Most breeders now contend that the bull's disposition is greatly dependent upon the care he is given while in his calfhood, but even with careful handling at that time, he may easily be spoiled later on if the handler does not know his business.

One of the most successful breeders of good-natured bulls, if we may call them by that name, believes that it is as easy to raise a gentle animal as the other kind, and with very little trouble. His method is to put his young bulls into a corral or pasture by themselves, where they are given the same care as any other animal would be given, with the exception that they are not petted or pampered, as many breeders do. They are, however, always given to understand that they must do what is wanted of them, and although no rough treatment is given them, such as pitchforks and the like, they soon learn their lesson through a short stout strap; but this is only used when absolutely necessary.

When the animal gets old enough for service, he is put into a corral which has a short, narrow breeding pen adjoining. A gate leading from this small pen allows the cow to enter, after which it is closed and the gate connecting it with the bull's corral is opened. By having such quarters, the bull is never bothered by handling, as the gates are so arranged that they may be opened or closed from the outside. This breeder considers that a bull which has never been teased or abused will treat human beings like any other dumb brute would, but says that many bulls are spoiled by owners who think it necessary to pick up a club as soon as a bull comes into sight.

As an illustration, a dairyman purchased a bull about two years ago that was noted for his good disposition, being a nice handler and never causing any trouble. The owner went East later on for a trip and left his ranch in charge of a hired man who, considering all bulls bad, always carried a weapon and finally one day used a pitchfork. Since that time all of the good-natured qualities have been forgotten, and the consequence is that a chain and ring are the only things that will conquer him.

Perhaps such examples could be found in every district, but as the above breeder said, "All bulls are not as bad as their names."

It is undoubtedly true, however, that unless a bull's disposition is well known, it is best not to take any chances, and therefore good strong quarters should be provided. In this respect the quarters used on one of Miller & Lux dairy ranches near Dos Palos have been found very satisfactory. The shelter here is provided for with a shed 48 feet long and 16 feet wide, divided into four enclosures by board partitions 7 feet high. The roof is 12 feet high in the front and 7 feet in the rear, the former being left open and the latter one enclosed. The floor is of 2 by 12 boards, sloping to the front, where a concrete gutter gives good drainage. Concrete water troughs with automatic floats are placed at the rear end, half way between the partition, thus serving for two animals. A feed box for concentrates and a built-in rack for hay take up the balance of the space across the enclosed end. Another space, 12 by 12 feet, with concrete floor, also drained by the gutter, extends on out from the shed, allowing the bull a place to exercise in during rainy or bad weather without being in mud. No partition separates the shed and this space, but there is another corral, with dirt floor, connected to this one by a gate, where the animal is kept in nice weather. This space is about 12 by 14 feet.

The building above described affords room for four bulls, the breeding pens being a continuation of the other corrals, where the cow is turned in at one end and the gate leading from the bull pen opened.

These quarters are not expensive, and furnish the double purpose of giving good comfortable quarters in bad weather and of handling the bull with no chance of accidents. Where more are kept, the plans could be enlarged, but the average dairyman with only one bull would only need one compartment.

A little money judiciously spent in building good quarters for the bull should be considered profitable, both from the value of the better care of the bull and from one's personal safety in handling.

STOCK GROWING IN ELKO COUNTY, NEVADA.

[Written for the PACIFIC RURAL PRESS D. L. SCHRADER.]

One of the largest as well as the most interesting agricultural sections of Nevada is Elko county, located in eastern Nevada.

That its reputation as a wonderful livestock country is not over estimated was seen on a trip the writer recently made through the district.

The leading farm industry in the county is cattle raising, due to the fact that as a whole it is well supplied with water and that the mountain ranges afford fine summer pasture, especially now that the Ruby National Forest has been organized. Most of the valleys have a large acreage of natural meadow, which supplies an abundance of good hay for winter feeding. The average elevation of the county is about 5500 feet and having quite a heavy snowfall, the cattle have to be fed from four to six months, depending on the seasons.

Numerous Registered Herds.—A pleasing feature is the fine herds of purebred beef cattle; the largest being owned by T. S. Short & Sons of Ruby Valley. Mr. Short has been breeding up his herd of Shorthorns since 1872, and today he has one of the finest herds in the west. To illustrate: after traveling through a good part of California, Oregon and Utah a purebred buyer of good judgment finally decided to buy from Mr. Short, stating that they were the best looking individuals that he could find anywhere.

Mr. Short has as his herd bulls, Orange Brentwood 377420, Victor Orange 317421, sired by Lord Champion 254700, owned by Purdy Bros. of Harris, Mo., and Baron Goods, who is a direct descendant of Young Abbotsburn, who was the World's champion Shorthorn at the Chicago Exposition in 1893. At present there are nearly 300 head of registered stock on the place. A two-year old Percheron stallion is also kept on the ranch that is a fine looking individual.

He also has purebred Poland China hogs and Rhode Island Red chickens.

The Brentwood Stock Farm, as it is called, is almost an ideal stock ranch; there being about 6000 acres, which coupled with plenty of water for irrigation, produces an annual yield of 6000 tons of meadow and alfalfa hay a year besides an abundance of good pasture, which simplifies the feeding question and makes it a paying proposition.

It is the intention to show some of this stock at the 1915 Exposition, and the selecting will soon start with that end in view.

H. H. Cazier of Star Valley has a splendid herd of purebred Herefords. He stated that the stockmen all through Nevada were realizing more and more the importance of purebred sires and that where a few years ago he had a hard time to sell a registered yearling bull at $60 he now finds a ready market for all his yearlings at $125.

Sheep.—The sheep industry is next in importance to cattle raising and with the high price of meats the raisers are beginning to grow more mutton sheep. A great many cross their Merinos with Shropshires, Cotswolds, Hampshires and other mutton types.

Lewis Sharp of Ruby Valley has an exceptionally fine herd of Cotswold sheep. He finds that they do especially well through the cold winters that this section has. The lambing season starts about March 15th; the ewes being provided with sheds to lamb in; the feed being meadow hay. He states that he finds that the wool on the Cotswold is not of very fine texture; but is very long and heavy and also that the sheep are a fine mutton type and cross well with the Merinos.

Another purebred breeder in this section is W. Johnson of Clover Valley who has a herd of Hampshire sheep. These are also a mutton type of sheep and seem well adapted to this climate and feed conditions.

Dairying.— On the smaller ranches dairying is carried on to a considerable extent. The rich pasture combined with the alfalfa and meadow hay grown through the valleys produce a splendid flow of rich milk.

In Lamoille Valley a co-operative creamery is operated, as in the South Fork Valley. The South Fork Creamery is having rather a hard time to keep running, as it is hard for the farmers who have been accustomed to running beef stock to get down to milking. The manager stated that many of the larger ranches were anxious to lease a part of their property very reasonably to men with dairy stock.

Grains.—Wheat, oats and barley do well all through the county and a grain crop failure has not been known of for 30 years, most likely due to the irrigating which is generally done twice a year.

Fruits.—With an elevation of nearly 6000 feet it is a surprise to find the variety of fruits grown. Pears, apples, peaches, plums, strawberries, raspberries, currants, and gooseberries all do well in different valleys without cultivation, pruning or spraying. This lack of care is due to the lack of a market as most of this fruit would have to be hauled from 10 to 40 miles before it could be marketed.

An illustration of the quality of apples grown was shown last year at the Oregon State Fair, where the Wolf River apples raised in Clover Valley, Nevada, took first prize in competition with the apples grown in other noted apple districts.

A visit to this section is a most enjoyable one, meeting so many good whole-souled people who seemed glad to see one and made living worth while.

With the Livestock Men.

The first large shipment of Australian butter arrived at San Francisco last week, the cargo consisting of 113,000 pounds for local sale put up in 56-pound cubes. It was reported that the receivers would ask from 30½ to 31 cents a pound for it.

H. P. Eakle, has leased his ranch near Woodland and will sell his herds of registered Shropshire sheep and Duroc-Jersey swine. This is one of the old herds in Yolo county and contains many good individuals.

More than a million pounds of fresh dressed meats arrived at Chicago last week from Canada. The prices ranged from 6¾ to 8 cents per pound, which is lower than the packers have been paying for beef on the foot before the new tariff went into effect, which admits dressed meats free.

Plans will be made to cut up the tract of 500 acres, near Newman, owned by M. I. Sullivan and Mayor Rolph of San Francisco, into four or five smaller ranches which will be used for dairy purposes. The irrigation system will also be changed.

Lewis Sharp, of Ruby valley, Nevada, reports that he has sold all of his Cotswold bucks, 350 of them having gone to the Ox-Yoke Land & Cattle Co. of Clover Valley, Nevada, and 200 head to O'Neil Bros. of Wells, Nevada.

The conditions around North Fork, Madera county, have been very hard on the stockmen this year, according to S. L. Hogue, of Fresno, who has just returned from that section. He states that many of the springs and wells are drying up and that some of the stockmen are having to haul water for their stock.

A report from Santa Barbara states that buyers from Imperial valley are paying dairymen as high as $5 per head for heifer calves before they are dropped. This is quite a difference from a few years ago, when oftentimes heifers were sold for veal in many districts.

According to State Dairy Inspector C. A. Pears, the dry year has been a benefit to Tulare county, inasmuch as most of the scrub stock has been sold and that left in the district are good producers and will greatly influence the future production of that section's butter-fat.

Cattlemen estimate that 50,000 head of sheep and half as many cattle will be driven from the vicinity of Soda Springs, Placer county, to the lower sections near Lincoln and Wheatland, this fall, a part of which have already been started.

Seven carloads of dairy cattle were shipped from the Modesto district to Fallon, Nevada, recently. There is no section in the State where dairy cattle have been more in demand than in this one this year, which demonstrates that it pays to raise high-grade stock.

A. W. Toreson, of Modoc county, sold during the week to the F. W. Caldwell Land & Livestock Co. about 1600 acres of his ranch. With the addition of this holding, the latter named company is now the third largest cattle company in Modoc county.

A part of the band of cattle rustlers which has been operating in the mountains of Santa Clara, Santa Cruz, and San Mateo counties were arrested near Mountain View last week.

The beef market at the Portland Union Stock Yards was a buyers' market, mostly due to the enormous amount of business transacted. The bulk of steer sales were made at $6.75 to $7.15, and bulk of cows at $6.00 to $6.25. The week's re-

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CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

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REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain. Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

K. W. ABBOTT, breeder of Holstein cattle. Stock for sale. Milpitas, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE—Three jacks and one jenny. To close an estate. Philip S. Driver, Sacramento, Cal.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

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HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

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CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

BRAE BOURNE RANCH—Berkshire hogs and Tri-color Collies. Young stock for sale. Mr. and Mrs. C. E. Rand, R. No. 3, Box 69, Santa Rosa, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-Horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

On account of having leased my ranch, will sell my herd of 115

PURE-BRED SHROPSHIRE EWES

about half registered and all bred to choice rams.

Also my pure-bred

DUROC-JERSEY BOARS AND GILTS

For full particulars, write

H. P. EAKLE, Woodland, Cal.

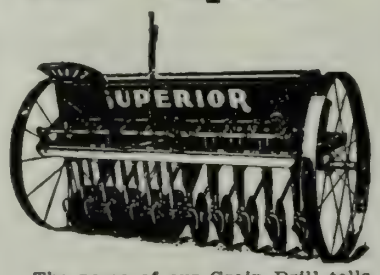
QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

The "Superior"



The name of our Grain Drill tells the story—"SUPERIOR." Furnished with 6 or 7 inch spacing.
Do not forget our
SPECIAL ALFALFA DRILLS.
20 discs 4 inches apart.
Write for prices and catalog.

THE H. C. SHAW COMPANY
Stockton, Cal.
WHOLESALE DISTRIBUTORS.

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Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

WANTED

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property Free. American Investment Association, 93 Palace Bldg., Minneapolis, Minn.

WANTED—Place as superintendent; advertiser is thorough in all lines of farming, fruit growing and irrigation; experienced in working all kinds of labor. Box 17, Pacific Rural Press.

SOLICITORS WANTED—We want three good subscription solicitors at once; good salaries will be paid. Write to Manager, Pacific Rural Press, 420 Market St., San Francisco.

WANTED—Burbank standard cactus leaves; highest prices paid. Address Sempervirens Cactus Farm, Santa Rosa, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

LAND FOR SALE.

I represent a tract of land now being divided. It is in Tulare county with foothill protection on three sides. The soil is choice, without trace of alkali. Water is obtained at 100 feet with a lift of 15 to 25 feet. Electric power is cheap. A new railroad is now building through the tract and a new town site will soon be dedicated. No portion of the tract will be more than three miles from railroad station and packing house. 20 acres of this land can be made to yield an income of $2000 to $4000 annually. 10 acres can make a good living for a family. The price averages about $150 to $160 an acre—some lots lower, a few lots higher. We ask cash payment of one-fourth the purchase price, then wait six years for the balance—low interest. Send for our illustrated booklet with map. There are special reasons why you should buy in the next six weeks—ask me why. W. P. McKEE, 546 Title Insurance Bldg., Los Angeles.

FOR SALE—42 acres in Subdivision No. 1 in River Garden Farms; 1200 feet of river frontage on Sacramento river; hog-tight fence; 15 acres in alfalfa; three wells of No. 1 water, windmill and tank; 10 acres of second growth oak timber; good dwelling, barn and outbuildings. A No. 1 place for a dairy. Price and terms, A. J. Clark, Grimes, Colusa Co., Cal.

MISCELLANEOUS

FOR SALE—Imported French Coach Stallion, "Coeur De Lion," Reg. No. 4073; description, dark brown; 16¾ hands high; 1350 pounds; foaled June, 1902. Awarded first prize International Horse Show, Chicago, 1905. Sired by French Government Stallion, Ajax. Dam, Sans Tache, by Fulminant. Address Box 3, Pacific Rural Press.

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored, new pistons, and thoroughly overhauled. We furnish you a rigid guarantee. Send for our Bulletin, it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco

FOR SALE—One Benicia disc plow, 4 eights, cutting 32 inches; can also be used as 2 or 3 disc, each cutting 8 inch; used two months. One Economy cream separator, small size, for 6 or 8 cows; used one year. Jesse L. Dargitz, Lodi, Cal. Phone Lodi 33F14.

To reduce the high cost of living, send for our Wholesale to Consumer Catalogue. SMITH'S CASH STORE, 106 Clay Ct., San Francisco.

ALFALFA HAY—I have some No. 1 alfalfa, and it will pay you to write me for prices before buying. W. G. COPPERNOLL, Gridley, Cal., R. D. 1.

AIR-SLACKED LIME, FERTILIZERS. H. B. Matthews, 733 Merchants Exchange Bldg., San Francisco.

TREES AND NURSERY STOCK

ATTENTION, WALNUT GROWERS—1200 Mayette trees grafted on California Black; prolific bearer, blight immune; scions of same in any quantity; sample of nuts now ready; they must be seen to be appreciated. For information, write to GEORGE LEITZ, Box 474, Newman, Cal.

Fruit Trees, Berries and Small Fruits; acreage planting a specialty. Roses, Bulbs. Lists ready. H. A. HYDE, Watsonville Nurseryman.

50,000 apple trees on rented ground; must sell; order now at half price. Full Value Nursery, Petaluma, Cal.

FOR SALE—Valencia and Navel Orange and Grape-Fruit Trees. Address STEPHEN J. HESLOP, Box 7, Delano, Cal.

AXLE & GREASE
LARGE HANDY BUCKET C&S SMALL CAN
WHITTIER COBURN CO. S.F. SOLE MFRS.

ceipts of swine were above the average prices, being from $8.25 to $8.30 for best light hogs. The first interest shown in the sheep market for some time was brought out during the week, prices for prime yearlings being up to $4.75, wethers at $4.25 to $4.50, and ewes at $4.00.

I. J. Jamison, of Tulare, is installing a Sharpless milking machine on his dairy, near Tulare. This in addition to his fine barn makes his dairy a model one in all respects.

It is expected that the city commissioners of Sacramento will pass a stringent ordinance regarding the sale of meat infested with tuberculosis, which has recently been found in many shops during the past few weeks.

The membership of the Tulare County Cow Testing Association is increasing so fast in membership a second association will probably be needed within a year.

"Ma of Fair cows," entered from Monmouth, Oregon, was named the grand champion Jersey cow at the National Dairy Show. Noble's Eminent Lad, of Falfurrias, Texas, was chosen the champion Jersey bull.

The Trans-Continental Freight Bureau has issued Tariff No. 54-A, which provides for free return of all stock exhibits made at the Pacific International Livestock Exposition to be held at Union Stock Yards, North Portland, Oregon, December 8 to 13, 1913.

R. L. Bohannon and G. F. Clark, of Yankee Hill, Butte county, sold last week to E. H. Tryon, of Colusa, 1218 head of Angora goats and 1185 pounds of mohair. The price paid was $1020.

The ranch known as the Ned McGrary place in Solano county has been sold to Robert Donald, of Suisun, who will start at once to stock it as heavily as possible with good grade cattle.

T. S. Glide, of Davis, visited this office this week and stated that the present year had been an unusually active one among sheep and beef cattle breeders, most all of the Shropshire bucks in the State having been sold and also a large portion of the beef bulls, and that many of the breeders were already sold o t of this year's Short-horn bulls.

The Aiken dairy ranch, in Butte county, was recently sold to R. O. Hobson and R. J. Pavert, of Oakland, who expect to fit it up with sanitary dairy barns and make it one of the best dairies in that part of the State.

Ed and Lloyd Cornell, of Porterville, who own Guadalupe island, off the coast of Lower California, report that their herd of goats at that place is proving very profitable and that they expect to sell 50,000 head to American buyers in the near future.

H. H. Favour, of Thalheim, San Joaquin county, recently purchased the bull Peter Valet from N. H. Locke, of Lockeford, and also 14 head of grade Jerseys with which to start a dairy.

W. M. Carruthers of San Francisco has left on another Eastern trip to purchase several carloads of purebred stock, most of the orders being for dairy stuff.

CONTRACTION OF TENDONS.

To the Editor: We have a horse which is afflicted with a swelling of the ankles of the hind feet. One of them has been swollen for some time, but the other has just become swollen lately. We have been told it is a case of swollen glands. The horse does not limp, but is inclined to rest on the toe of the foot when standing, and seems to be bothered when going down hill. Can you tell me what is the trouble, whether it is serious or not, and what can be done for it?—Subscriber, Los Gatos.

ANSWER BY DR. E. J. CREELY.

This is tendonitis resulting in contraction of the floxor tendons. Shoe with a heel calk ¾-inch high, no toe. Apply a good liniment at night after which put on a soaking wet swab. The tendons should really be blistered.

San Francisco Veterinary College.

APPROVES HORSE BREEDERS' ORGANIZATIONS.

To the Editor: I was much interested in your article, "Horse Breeders Should Organize." In it the writer touches on an interesting subject—the awarding of premiums to unsound horses.

This is palpably wrong, but the question of soundness should not be put up to the judge for it takes time to thoroughly examine a horse for soundness and it is out of the question to expect the judge to try a horse's wind in the show ring. I am quite aware that some are easily detected, but there are windy horses which could go through the show ring without showing anything wrong. The examination should be made by a competent veterinarian before the judging, and any that are unsound should not be allowed in the ring. We shall have made a distinct step forward when every premium at our State Fair is practically a certificate of soundness.

I am heartily in favor of a California Draft Horse Breeders Association and would suggest that immediate steps be taken to organize. HENRY WHEATLEY.

Napa.

The draft horse business has before it some of the greatest possibilities of any branch of California live stock and there are more opportunities for remedying unfortunate conditions and putting things right than in any other line of work. The only way to get anything done is to have somebody do it, and these opportunities before the draft horse industry of the State will never be taken advantage of until the horse breeders get together and do what they all know can and should be done. This approval of a breeders association is given by every good breeder that speaks of the matter and nothing should be easier accomplished.

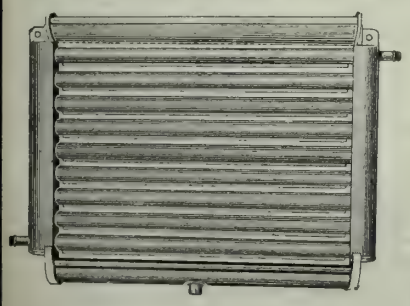
PERCHERONS

Pure-bred and registered. If you want good ones, I've got them.

E. S. PORTER, Los Molinos, Cal.

ONE-HALF MILE SOUTH OF TOWN

KELSEY TUBULAR MILK COOLERS



Made in all capacities. Buy now and save money. We are the largest manufacturers of milk coolers in the Southwest. To enable us to keep our shop busy during the winter months we are going to make you a discount. BUY NOW AND BUY RIGHT. Our Tubular coolers guaranteed for twenty-five years, and are sold subject to trial. Write today for special proposition.

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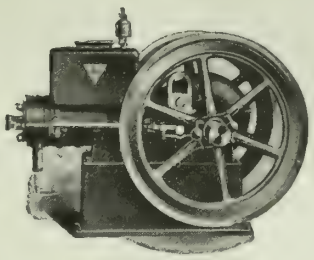
Alpha Gasoline and Distillate Engines

A Big Hot Spark



A Quick Start

Alpha Gasoline Engines have the new gear-driven built-in magneto which eliminates all batteries and won't wear out.

It throws a big hot spark that never weakens.

The Alpha Engine starts on the magneto without turning it over and requires no cranking.

It is a low fuel consumer, with high efficiency. Case hardened and ground wearing parts practically eliminate wear and breakage.

The highest grade, most reliable gasoline engine that money can buy.

The most dependable engine on the market for pumping plants, etc.

Alpha Engines were awarded the gold medal at the California State Fair.

We also manufacture the new up-to-date IDEAL GREEN FEED SILO which has become so popular in the Pacific Coast States.

Write for catalogues and full information today.

DE LAVAL DAIRY SUPPLY CO.

101 Drumm St. SAN FRANCISCO

"Everything for the Creamery & Dairy"

1016 Western Ave. SEATTLE, WASH.

HILL CREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, California.

KING LANCASTER, Son of King Edward, only three-time Grand Champion at California State Fair.

Breeder of

SHORT-HORN CATTLE
SHROPSHIRE and
MERINO SHEEP

Have for sale some choice range-raised bulls sired by King Lancaster, Knights Perfection and Bapton Broadhooks III. Single or car-load lots.

America's Leading Horse Importers

PERCHERONS

As usual, every **First Prize** winner at the Great California State Fair can be seen at our stables. If you want the **Best**, let us hear from you.

McLAUGHLIN PERCHERON CO.,

47th and San Pablo Ave., Oakland, Cal.

FIRST CLASS DAIRY COWS FOR SALE

The Vina Dairy, owned by the Stanford University, have decided to dispose of some of their non-registered stock in order to make room for, and give better attention to, their large herd of registered Holsteins.

If you are interested in good Holstein types and heavy producers, call or write to the VINA RANCH, Vina, Cal.

Purebred Sire Associations.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Scrub bulls and their boon companions scrub cows, are undoubtedly one of the most serious handicaps to the dairy industry of the State and while they have been kicked from pillar to post by every profit seeking dairyman, the fact remains that we still have them with us.

No doubt many of our dairymen who keep such stock do so thinking a bulls a bull, but on the other hand there are many who partially realize the benefits to be derived from a good animal, but for some economic reasons do not see their way clear to keep one.

Theoretically and practically no dairyman can afford to feed the scrub sire, but in our present stage of development there are many cases where it is an impossibility so to speak to do so.

This, of course, does not apply to the large or medium sized dairy that has become permanently established, for such dairymen should be leaders instead of laggards on the purebred sire question. The dairymen who have seemingly good excuses for using scrubs are those starting with small capital simply doing the best they can at the start and those who only maintain small dairies.

As the latter kind will doubtless be the rule when the industry becomes fully developed, some scheme other than the ones now in vogue will have to be used if the average production per cow is to be increased.

Although so far no organized effort has been made by dairymen along purebred sire association lines, the need is becoming so pressing that not only grade dairymen but purebred breeders as well are giving it more thought as their interests are so closely allied that what affects the dairymen greatly influences the breeder.

This is not saying that good results cannot be obtained with such associations by purebred breeders also, but the most pressing need now is among the grade herds.

A few of the advantages from these associations are that higher quality bulls can be used collectively, at much less expense than where individually as may be seen through the stallion associations scattered over the advancement of testing, better laws regulating the control of animal diseases, and also create such a reputation for good producing stock that buyers will pay more money for any stock that is for sale. There are numerous other benefits, but dairymen will see that those given are worth the effort.

There are some advantages to be overcome, the first one being personal differences which must be thrown aside, the difficulty of securing competent leaders as officers and the danger of spreading contagious diseases among the herds, but on the other hand such associations can become a big factor in eradicating diseases from a community providing strict regulations are enforced governing the service and the changing of a bull from one herd to another.

Some well planned constitution and by-laws should be used in forming such associations and the following form which has been used by some eastern associations may be modified to suit conditions in California.

THE CONSTITUTION.

Art. 1. It should be the purpose of this association to procure and use pedigreed sires of merit for the purpose of improving our live stock through a system of upgrading. This method of improvement implies the continued use of some one kind of pure blood on the grade and mixed bred stock. The association opposes the admixture of blood of several breeds and the use of cross-bred, grade and scrub sires. The association also pledges itself to exert every possible influence for the improvement and furtherance of the live stock interests of the community.

Art. 2. The name of this association shall be——.

Art. 3. The annual meetings of this association shall be held on the ——.

Art. 4. The officers of this association shall consist of a board of five directors, from which shall be elected a president, vice-president, and a secretary-treasurer, whose term of office shall be one year, except the directors, whose term of office shall be three years. At the first meeting of this association there shall be elected one director to serve one year, two directors to serve two years, and two directors to serve three years.

Art. 5. The president shall preside at all meetings of the association and of the board of directors. He shall countersign all orders for money authorized by the association or board of directors. He shall sign all stock certificates and have general supervision of the affairs of the association.

Art. 6. In the absence of the president, the vice-president shall have the same power and duties of the president.

Art. 7. The secretary shall keep a correct record of the proceedings of the association, also of the board of directors. He shall keep a debit and credit account of the financial transactions of this association. He shall furnish the caretakers of the sires of this association with books

THE BEST LINIMENT
OR PAIN KILLER FOR THE HUMAN BODY
Gombault's
Caustic Balsam
IT HAS NO EQUAL

For the Human Body—It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons Exterior Cancers, Boils Corns and Bunions CAUSTIC BALSAM has no equal as a Liniment.

A Perfectly Safe and Reliable Remedy for Sore Throat Chest Cold Backache Neuralgia Sprains Strains Lumbago Diphtheria Sore Lungs Rheumatism and all Stiff Joints

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

REMOVES THE SORENESS--STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

Calves Without Milk

Cost less than half as much as the milk raised calves. Increase your profits by using

Blatchford's Calf Meal

The perfect milk substitute—Best since 1890. Ask for free book, "How to Raise Calves without milk." Your name and address on a postal is enough.

COULSON CO.
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HOPLAND SHORTHORNS

We still have some excellent Shorthorn Bulls, just ready for the range. Write for prices.

HOPLAND STOCK FARM, HOPLAND, CAL.

HOLSTEIN-FRIESIAN BULLS

BRED FOR YEARLY PRODUCTION

Riverside Sadie De Kol Burke

Two of our herd bulls are from 28,000-lb. dams with butter records of 1085 and 1142 lbs. We have fifty cows on yearly test. The first eight junior 2-year-old heifers to finish average 471 lbs. fat (588 lbs. butter, 80% basis). Ten cows have finished, including two 3-year-olds and three 4-year-olds, with an average over 700 lbs. fat (875 lbs. butter). Fifteen cows have averaged 651 lbs. fat (813 lbs. butter). Estimate the value of a bull in your herd backed by such production. Place your order now, as they are going fast. Write for information and prices.

A. W. MORRIS & SONS, Woodland, Cal.

Salvador Stock Farm

Shire Horses

At the State Fair just closed, every first prize in the Shire classes was won by horses imported by the Salvador Stock Farm.

Stallions and mares for sale at reasonable prices.

HENRY WHEATLEY, Napa, Cal.

1st Prize Ram Lamb, Omaha, 1911

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

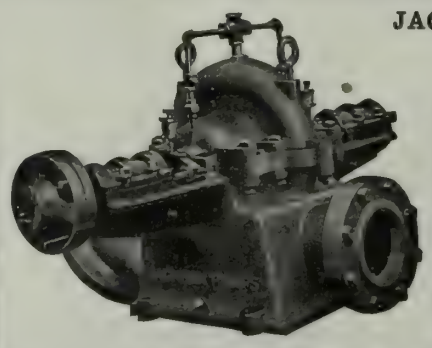
HEREFORD BULLS

100 Hereford Bull Calves 100

FOR SALE

Single or in Carload Lots

DAVID JACKS CORPORATION - - MONTEREY, CAL.



JACKSON HORIZONTALLY SPLIT DOUBLE SUCTION PUMP

WATER IS WEALTH

No place is this more true than on the farm. Irrigation economically and intelligently performed produces dollars where cents previously grew.
For economical, efficient and continuous work in the Irrigation System, on the Orchard and Farm the Jackson pumps have met the severest tests.

WRITE FOR CATALOGUE No. 47-B.

Byron Jackson Iron Works, Inc.
357-361 Market St., San Francisco, Cal.
Los Angeles: 212 North Los Angeles St.
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WATER PIPE

Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

THE EXCLUSIVE PIPE HOUSE.

PACIFIC PIPE CO.

Main and Howard Sts. San Francisco

in which to record the service of each sire, together with the date of service and the owner of the animal served.

He shall settle with the caretakers at least once in —— months, giving them a receipt for all money received from them. At the annual meeting of the association each year he shall give an itemized report of the business of the association for the past year and at the expiration of his term of office shall turn over to his successor in office all books, papers, and all property in his possession belonging to the association. He shall draw and sign all orders for money on the treasurer authorized by the association or board of directors; also make out and sign all certificates of stock of the association.

As treasurer he shall give a good and sufficient bond with at least two sureties for twice the amount of money that may come into his hands in any one year. He shall pay all orders for money drawn and signed by the secretary and countersigned by the president. When in funds, he shall keep a debit and credit account of all moneys received and paid out by him for the association. He shall at the annual meeting of this association give a report of amounts of money received and paid out by him, and settle with the board of directors by producing vouchers for all money paid out.

Art. 8. The regular meetings of the board of directors shall be on the ——.

Art. 9. The board of directors shall have charge of all business of the association, except in opposition of a majority vote of the stockholders of the association at regular or special meetings of the association.

Art. 10. Three directors shall constitute a quorum to do business, but a less number may adjourn to another date.

Art. 11. Special meetings of the association may be held on a call from the secretary by notifying each stockholder at least 24 hours in advance of the meeting; also on petition of five stockholders to the secretary.

Art. 12. These articles of agreement may be amended at any meeting of the association by a majority vote of those present and voting.

THE BY-LAWS.

1. It shall be the duty of the officers of this association to purchase the necessary sires and negotiate with competent parties within the association, centrally located, to care for and handle the bulls at a sum not to exceed $—— per annum.

2. All bulls must be purchased subject to the tuberculin test as a safe-guard against the introduction of tuberculosis.

3. No bull or bulls or other breeding animals shall be purchased from any herd in which three or more cases of abortion have occurred during the past three years. (This will make reasonable allowance for accidental abortion and act as a safeguard against the ravages of contagious abortion.)

4. Should any contagious or infectious disease appear in the herd of any member of this association he must forfeit the right to patronize the males of the association until such time as his herd is declared free from disease by a competent veterinarian.

5. A service fee of $1 shall be charged members of the association, to be collected at time of service. A charge of $2 will be made to non-members in case the association shall decide to accept the patronage of the same.

6. Service fees shall be used to defray cost of maintenance and handling of sires. Any surplus accumulations from this source may be divided among stockholders as dividends.

7. It shall be the duty of the officers of this association to require and see to it that each sire is kept in a strong, vigorous, healthy condition, in moderate flesh, with plentiful supplies of suitable feed and sufficient yardage to afford ample exercise in the open air and sunshine in addition to the protection of the stable.

8. Bulls shall not be used for service under one year of age, nor shall heifers be bred to calves under 24 months of age. During the rush of the breeding season single services only will be allowed.

The Attraction of the Farming World

The Schmeiser Land Checker and Leveler

Levels the land and leaves it perfectly smooth. Makes perfectly uniform, straight checks. Does the work better and quicker than any other implement or method, and

SAVES TWO-THIRDS (2/3) THE COST

Machines are operating near Davis. Write us, giving your 'phone number, and we will advise when and where they can be seen. See it for yourself.

Schmeiser Manufacturing Company, Davis, California

MICA AXLE GREASE

Mica Axle Grease

Makes the load easier. Pleases your horse—less strain on the harness. The Mica does it.

Eureka Harness Oil

Adds life and strength to your harness. Fills the pores of the leather, keeping out moisture and grit. Keeps the straps clean, bright, soft and pliable. Both are Standard products of their kind. Sold by dealers everywhere and made by the

Standard Oil Company
(CALIFORNIA)
SAN FRANCISCO

EUREKA HARNESS OIL

NO PIT
is required with the
Krogh Deep Well Turbine Pumps

You bore a hole and insert the pump in same, no matter what depth to water. Pumps are automatically water balanced and are self-aligning.

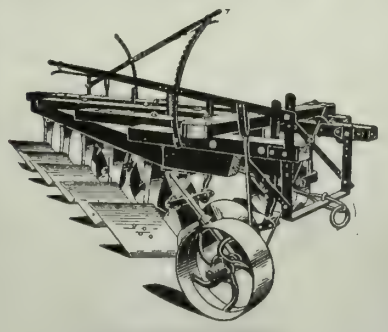
More water can be obtained from a bored or drilled well than with any other type of pump.

Write for Bulletin

Krogh Manufacturing Company
SAN FRANCISCO, CAL.
Branch at
LOS ANGELES, CAL.

Stump Pullers

California Stump Puller Company
704 Bryant St., San Francisco



SHAWSTOCKTON
HORSE OR TRACTION GANG PLOWS.
Our Own Manufacture.
Furnished with Slip Shares, Reversible Mold or Oliver Bottoms.
Write for Prices and Catalog.
THE H. C. SHAW COMPANY
Stockton, Cal.

REDWOOD TANKS
I sell to the consumer. Box shook and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon tanks, Spraying tanks. Independent.
R. F. WILSON, Stockton, California.

Put Alfalfa in Right.

(Continued From Last Issue.)

The levees are built by running a Fresno scraper across the field at right angles to the levee lines and dumping on each levee in turn. The dumpings should be well lapped over one another so as to leave no gaps, and enough earth should be put on the levees so that after being dragged down, smoothed off and settled by water they will be not less than 8 inches high in the center and will have a base at least 8 feet wide. To make levees of this size requires two ordinary scraper loads of earth in a place.

In scraping for the levees, a careful man, especially if he is doing his own work, will endeavor to work down any high places there may be on the land, using the earth from them to build the levees. To do so involves more work than simply scraping in straight lines across the field, but it will save work on the later leveling inside the checks, and also will enable him to leave the surface soil unmoved on other parts of the checks.

This brings up a point that is sometimes urged in favor of plowing before checking and a point that is well taken, namely, that by the common method of merely disking before checking, all the best of the surface soil is scraped off the checks and put into the levees. Now in the arid and semi-arid West this removal of the surface soil is not so serious a matter as it is in the humid East because of our soils are relatively uniform in composition to a much greater depth than those of the humid regions; in fact, most of our soils have no "raw subsoil" in the sense in which that term is used in the East. Nevertheless, on soils here that have been gang-plowed for grain for many years the humus and other vegetable matter in the top few inches of soil may be a matter of importance, and there is some reason in the protest against scraping it all off and putting it into the levees. If left where it belongs, the presence of this vegetable matter will undoubtedly benefit the seed bed. On the other hand, if it is all put into the levees there may be too much of it in the soil of the levees, making that soil too open, and thus less able to absorb moisture and more prone to dry out until the vegetable matter shall have decayed. It is possible that some failures to get a stand on the levees may be at least partly due to this reason.

When the land is plowed deeply before checking, the vegetable matter is turned under beyond the reach of the scraper and so remains where it belongs to benefit the seed bed.

On land that has too much fall to irrigate well in strip checks and where the fall is still reasonably light, not over two feet to the hundred at the outside, the contour type of checking will be found the most desirable. In fact, some people prefer contour checks under all possible circumstances, because the amount of water applied to the crop can be more evenly distributed in them than in strip checks, provided the contour checks are well leveled. This is particularly true of very light and very heavy soils.

The reason why more even distribution of water can be secured in well made contour checks is because in irrigating checks of this type they are completely filled with water, like a basin, to the depth that seems desirable, and the water is left to soak into the land. If the floor of each contour check is level, the water will stand at the same depth all over it and consequently the same amount of water will soak into every portion of the check. In practice contour checks are not usually made level, but are somewhat lower on the downhill side so that the water stands deeper at that side, which therefore receives more water than the higher portion. But if the checks are leveled, as they should be, it is quite possible to give every part of each check practically the same amount of water, and thus to secure good and uniform growth of the crop all over the checks.

The necessity of moving a large quantity of earth in order to level the checks when the fall is rather heavy is an objection to contour checking.

(To Be Continued.)

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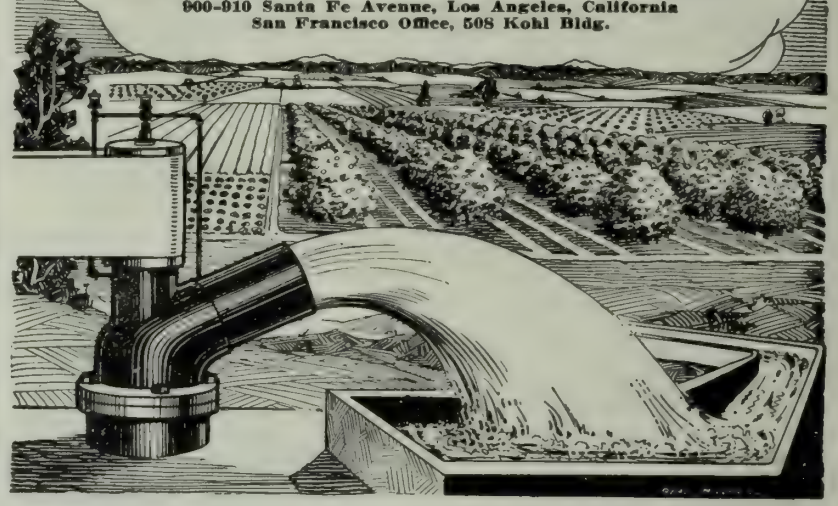

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Some News From Egg Centers.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

The Petaluma Poultry Journal comes out this week with a budget of news concerning the prospect of poultry produce in a number of the States that materially affect us in the matter of prices. Owing to the protracted heat this summer most all the poultry in the east and middle west are in poor condition, feed is high, and in some places scarce, so that a great many poultry have been sold.

NEBRASKA.—Production is a little under what it was a year ago at this time. Reports from many points show that the hot weather is still apparent in receipts.

MISSOURI.—While many points are producing about as many eggs as last year, a large percentage of shippers say the production in their territory is not within 25 per cent of normal, with quality unusually defective. Some shippers expect a short fall and an early winter, and they are counting on few eggs and high prices. Throughout the State the poultry is in bad shape, and many farmers have reduced their flocks. Almost every section reports a free selling of hens on account of high feed. Points like Sedalia, which are shipping 50 cases a week, should be turning out 100, and the quality is poor. Rain is necessary to insure a good fall lay at some points.

IOWA.—Until within the past few days most points in Iowa reported collections of poor eggs, but cool weather has begun to show in current receipts. A light fall lay is predicted. As one shipper puts it in forecasting winter prices, "eggs will be as high as a cat's back."

OKLAHOMA.—Production is normal but the outlook is not encouraging for a heavy fall lay, as feed in most sections is high and farmers are thinning out their flocks. Crop failures were experienced in many sections in Oklahoma, and feed is scarce. This will show itself, shippers predict, in high winter prices.

In nearly every State the same conditions prevail, so it is easy to see that the Californian who has a nice bunch of hens in fair condition for fall and winter laying is about to come into his own. And this will not be necessarily be at the expense of the consumer either, for if prices were not to range too high, the people who need eggs would not be able to buy them. But our opportunity lies in getting the fresh native product to the people so that once having the acquired taste for the strictly fresh product, the stale eggs that are shipped in from other States will find no favor.

They never sell low enough to make up for lack of quality, but dealers push the sale of them fearing they will go rotten on their hands. Very few people when buying eggs realize that the dealer is trying to sell them eastern eggs, and holding California eggs back out of personal interest but that is the way it goes.

Rain is needed in our own State to start vegetation, so that the hens can pick a little of their living. At present eggs are not coming as freely as they should be even from hens well over the molt and one good rain would make a lot of difference. For those who are fortunate enough to have plenty of green feed rain does not matter so much, the green feed answers every want of the hen along that line. At present I am sprouting oats and barley, and this is a great help, although somewhat of a chore to keep plenty on hand as it grows rather slowly.

HOLD ON.—The idea I want to convey to all poultrymen at this time is that this is a good time to hold on to all the good laying stock you have, and certainly to all the pullets that are soon to commence laying. It will take some time for the States that have had such backsets to adjust themselves that the egg yield will get back to normal and long before they will be in a position to ship outside their own territory, in the meantime we have our markets to ourselves. It is an ill wind that blows nobody good, and in this case while we may feel sorry for others, we must take advantage of the tide that flows our way. Get the hens in the pink of condition and make them shell out the doubloons, good feed and care will do it in our climate.

As we have several inquiries that will take up the rest of our space we will postpone this winter egg subject for another paper.

One of our subscribers writes asking for a recipe for stimulating egg laying, and although I am not a believer in drugs, it is not for me to say what anyone else shall do, that is each ones own business. Personally I prefer to trust to good wholesome feed, dry quarters, green feed and cleanliness.

"Please state through your columns what ingredients I should buy for stimulating egg production during the winter months. I know that there are special preparations sold, but I prefer to purchase the ingredients and do my own mixing?"—Subscriber, Stanislaus county.

ANSWER.—The following recipes are taken from Dr. Prince T. Woods' book, and you will have to test their efficiency for yourself as I have never tested them myself. Dr. Woods, says however, that they have been tested and proven before being accepted:

CONDITION POWDER, OR EGG FOOD.

Potassium Nitrate (saltpeter), 12 oz
Iron sulphate (copperas), powdered fresh, 20 ounces.
Table salt (sodium chloride), 12 oz.
Powdered Charcoal, 10 ounces.
Flowers of sulphur, 18 ounces.
Fenugreek, 28 ounces.
Blood meal, kiln dried, 70 ounces.
Flaxseed meal, 30 ounces.

Reduce all to a powder and thoroughly mix. Mix one heaping tablespoonful with sufficient mash food for 20 hens.

CONDITION POWDER No. 2.

Fine ground raw bone, 50 pounds.
Pulverized oyster shell, 10 pounds.
Powdered Fenugreek, 10 pounds.
Powdered Calcium phosphate, 10 lbs.
Black Pepper, 10 pounds.
Powdered Gentian, 8 pounds.
Venetian Red (red iron oxide), 2 lbs.

Reduce all to fine powder and mix thoroughly. Use one heaping teaspoonful to one quart of moist mash.

Our subscriber can take his choice of the two, as will be seen some of the ingredients can be bought from the feed store and the balance from the drug store and no doubt they can be made up in quantities much cheaper than they can be bought ready mixed.

MUSTARD.—The last two or three years there has been a great deal said about giving mustard to poultry, and so far as the green mustard goes I quite agree with it, but when it comes to irritating the digestive organs of the hen with dry mustard one day after another I say it is not rational. Still, as I have told you before, I always experiment in a small way with every new thing that promises anything good, even against my own reason, because I want to know what I am talking about. So last winter I bought some mustard, the real poultry mustard advertised, and fed it to a few selected hens for the purpose. I didn't notice any increase in egg supply or if there was any at all it was very small, but I did notice that the hens had a nasty yellow discharge in place of the usual droppings tipped with white, the one sure indicator of perfect health in poultry. Of course I did not keep up very long with the mustard treatment, still it was long enough to prove, to me, that there was very little to be gained, and much to lose by giving it to a flock of hens as a steady diet.

Just by the way of a starter, any stimulant will answer, and if we have hens that are not intended for breeders at all why we need not so safeguard them as to keep all stimulating food away, but so far as mustard goes I have not very much faith in its efficiency as an egg promoter.

COLDS.—This is the season for fall colds, therefore it is quite necessary to keep one eye on the chickens while eating to notice if there are any snuffling. A dose of coal oil in a warm mash at night is the very best thing for colds in the first stages. If you notice any running nostrils don't delay in the treatment, also put coal oil in the water vessel, it swims on top, but in trying to get a drink, the oil cleanses the nostrils of the fowl. A little bluestone in the water once in awhile as a preventative is also good. Bluestone is a great germ destroyer and is cheap, but mind not to overdo and give too much, a piece about as big as a pea is sufficient for one gallon of water and it must not be given more than two days in succession internally.

Fifty acres of land near La Jolla, San Diego county, is now valued at $660 which sold in 1871 for $7 an acre.

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CHOICE BUFF ORPINGTON cockerels for sale; prize winning stock. W. Delamater, Salida, Cal.

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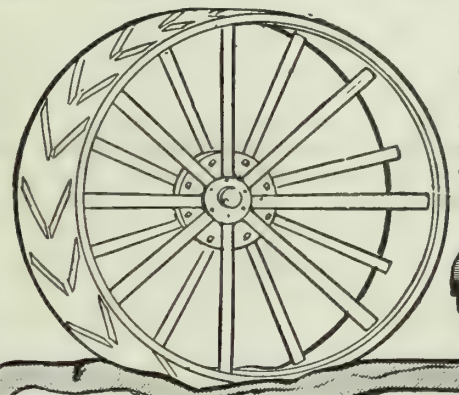
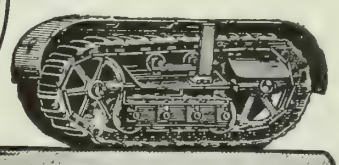

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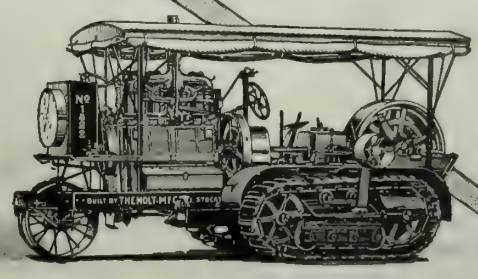


The Home Circle.

Being a Father.

"I know something about the proud feelings that swell a man's breast when first he becomes a father," said Stimson. "I have had them myself. When they came to me I was almost afraid to go out on the street. I feared that I might sink knee deep in the brick sidewalk, I felt so large and important.

"The whole world smiled when that baby laughed and when he wrinkled his face to cry it seemed that the universe was about to break forth in a sob. Now the baby has grown large enough to wear out six pairs of shoes in a year and his voice is taking on more of the qualities of the calliope.

"One by one," went on Stimson, "the young men who grew up with me have become fathers, evidently in preparation for the census that is to be taken in a a short time and desiring to have communities in which they live show up well in the large book the government will issue later on.

"When a man becomes a father for the first time he is suddenly bereft of any reason he might have possessed previous to that period. I know now that I was that way myself, but there was some reason for it. I was the father of the handsomest, brightest boy in the universe. Many of my friends have felt the same way, but I could see no reason for their elation. Their children were common looking. There was no indication of intelligence about them, so far as I could see. Compared with my child they would not have stood any show at all.

"But I have been compelled to keep the recording angel busy when called upon to admire the children of my friends. My natural accomplishment as a ready and willing prevaricator has been of great advantage to me.

"'Did you ever see such a head as that?' asked Billson a few days ago, assisting his wife in unwrapping something from several yards of white flannel and exhibiting it to me a round thing that looked like a stunted watermelon.

"Billson is my next door neighbor, and his wife is a sweet little woman, so I went into raptures over the baby's head. Then Billson was encouraged and showed me the baby's arms and legs and feet. I lied cheerfully about each separate limb.

"My attention was called to the extreme width between the child's eyes, and at the same time I could not help noticing the width between the gums, but I did not speak of my discovery. It seemed to me to be a fine feature. If the child should be ailing at any time in the future as young children are likely to be, it would be comparatively easy to turn him wrong side out and treat the ailment with local applications.

"Billson also spoke of the baby's nose being exactly like his own, and again I showed my depravity by agreeing with him. The baby's nose was situated in the middle of the infantile countenance and looked like a push button. Billson's beak is like that of the American eagle, but I told him the baby's nose was very much like it. The baby did not know it was being maligned and the lie pleased Billson.

"Another friend called me in one day to see his young hopeful walk, but the child tripped on a figure in the carpet and did a face fall that would have made a German comedian's fortune. I was about to applaud the performance, but restrained myself just in time to preserve our friendship. Any amount of applause I might have contributed would not have been heard, however, for the baby again took the center of the stage to call attention to his injury.

"Many of my friends," Stimson proceeded, reflectively, "have told me from time to time that no sum of money would buy their children, and I know they all meant what they said. Millions would not buy one of those children; but nobody will ever offer a cent for one of them. The rich do not want them, since the supply of poodles is still almost equal to the demand. The poor could not buy them, and besides they have enough of their own.

"While I lie cheerfully to my friends about their children I cannot help comparing each child to my own and the other children always suffer by the comparison. My baby's eyes are brighter, his cheeks are softer and his mouth is not like the cavities in the faces of the other children."—Journal of Agriculture.

A Mortgage Better Than a Deed.

A Swede appeared in a lawyer's office one day and said:

"Meester lyer, I bote some land and I vant a mortgage."

"A mortgage?" asked the lawyer in astonishment.

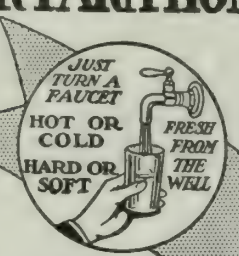
"Yah, ya."

"No, not a mortgage," replied the lawyer. "What you want is a deed."

"No, no," insisted the simple Swede. "I vant no deet. I bote land from Pader Yohnson sum yahr ago and got a deet and anoder fallar coom along mit a mortgage and took the lant so I dink a mortgage bin besser than a deet."—Business.

I love to use the current phrase. I score the slang of other days. No more I join the merry din "Pull down your vest!" "Wipe off your chin!" I would not raise the jovial shout, "Say, does your mother know you're out?" I much prefer such fol-de-rol as "Oh, you kid!" and "Baby Doll!" And he whom once I called "a rube" is now a "bonehead" or a "boob." But in ten years or so no doubt, the present flippancies we'll flout and joyous wheezes will be flung in slang that is yet un-slung.

FOR FARM HOMES



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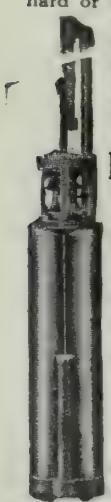

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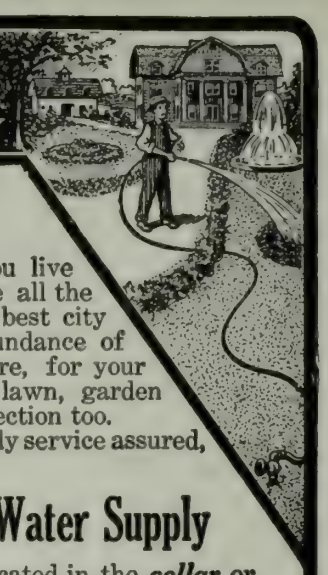

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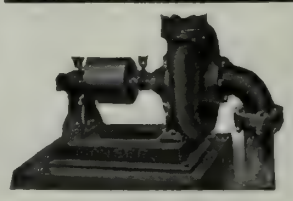

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PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

Painted Floors a Labor Saver.

[Written for the PACIFIC RURAL PRESS.]

Every good housekeeper is particular about her floors and especially painted floors, for once let such get in bad condition about the only thing left to do is a covering of linoleum or the laying of a new floor.

The kitchen floor being in continual use every day in the year, is usually the worst eye sore and the one needing most attention.

If the floor has not already been put into good condition, one or more coats of paint at this time are advisable, as the muddy season with its accompanying dirt is hard on the painted floor.

Before applying the first coat of paint, the floor should be absolutely clean of grease. This may be most easily accomplished by cleaning such places with gasoline or benzine, after which all dust should be cleaned up with a whisk broom or other similar tool.

The paint for the first coat should not be too thick and should contain plenty of dryer, either turpentine, Japan or litharge. Usually prepared floor paints contain plenty of dryer and only require stirring up. In purchasing such paints however, one should ask for inside floor paint, there being a difference between that and outside floor paint.

In applying the paint, it should be evenly applied, and any cracks should be brushed crosswise that they may be thoroughly filled up if not too large.

Usually the best time to paint the kitchen floor is after supper, giving it time to dry during the night.

If sufficient dryer has been used, it will be dry enough by morning to walk over.

By giving the first coat plenty of time to harden, three or four days, if convenient, the second coat may be applied having first puttied up all holes or cracks.

The second coat should have a good body and be heavier than for the priming coat, also more care should be given in applying evenly. If it is possible, 24 hours should be allowed this coat to dry before walking on it and then care should be exercised, for another day or so until it has a chance to harden.

It will usually be found more economical to apply one good coat twice a year than to allow the floor to get in so bad a shape that it requires more, not only on account of the saving in the lumber, but also the saving of elbow grease which mother needs to conserve.

Christmas Presents.

The wise ones consider that it is none too early to begin thinking of Christmas presents.

A present that is very acceptable to some people and carries with it much of the personality of the giver is a plant which has been slipped from one of her favorites and has been carefully tended until it is in good condition. It does not need to be large. Such a present should be started now. Bulbs planted now and brought to bloom or almost to bloom in time for Christmas make beautiful presents and are much more precious than the same thing bought at a florist.

Photographs of ourself make a delightful Christmas remembrance. Photographers are always very busy for a month before Christmas. Time for two or even three sittings should be allowed so, to secure the best results, begin soon.

Oftentimes in a home there are choice art folios which have waited year after year for binding. This would make a most acceptable present for their owner. With a little strategy it could probably be kept a surprise. This, too, should be done early.

At the present day when such beautiful work is done in amateur photography all sorts of presents of peculiarily personal value can be made. For instance, for the person who has taken great interest in the planting and developing of a yard, a book filled with pictures showing the growth and changes in the shrubbery, trees, etc., would be greatly prized. A book containing the record of a pleasure trip would be prized as a keepsake.

A delightful present for anyone who likes to remember a good many birthdays, marriages and deaths is a calendar of such a form, that dates can be marked with a silver and gold star or in some other pretty way. These events in the lives of relatives in whom the recipient is interested can be indicated on the calendar with the explanation on the back. This would probably involve some letter writing, so plenty of time should be allowed, for all people are not prompt in answering letters.

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"SA-SA-MA"	A high-grade uncolored Green Japan Tea.	60c per lb.
"LONDON BLEND"	A good English Breakfast Black Tea.	50c " "
"DALMOY BLEND"	The choicest Black Tea the world produces	75c " "

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THE ANGLO-CEYLON COMPANY'S TEAS are carefully selected and blended by experts. are guaranteed to be absolutely pure. are always fresh and packed only in air-tight tins. offer the very best value obtainable at respective prices.

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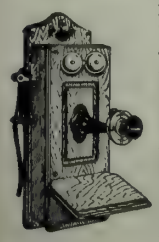

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Drop us a line or come in and see us for Free Samples, Information, etc. THE LILLEY & THURSTON CO., Rialto Bldg., San Francisco, Cal.

A drummer in Texas in his automobile, having lost his monkey-wrench, walked up to the house of a Norwegian and asked "Have you a monkey-wrench?"

The Norse citizen replied: "No. Mr. Yonson over there haf a cow ranch, Mr. Peterson he haf a horse ranch, ole man Gunterson keep a goat ranch, but I don't tank there bane any falar roun' hare fool enough to start a monkey ranch."—Exchange.

"Then your wife didn't enjoy her trip to Niagara?" "No, the minute she saw that rushing water she began to wonder if she hadn't come away from home and left the bath-tub faucet running."—Washington Herald.

THE MARKETS.

San Francisco, Nov. 5, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The market continues in the same old groove, with little local trading except in a small jobbing way, though considerable stock is arriving from the North for millment. Values are steady at the old quotations.

California Club, ctl	$1.47½	@1.50
Forty-fold	1.50	@1.52½
Northern Club	1.47½	@1.50
Northern Bluestem	1.65	@1.67½
Northern Red	1.55	@1.70

BARLEY.

The rain has brought an easier feeling in the speculative market, and the week opened with very heavy trading in the December option at slightly lower prices. This has caused a little easier feeling in the spot grain, and little business is being done, as prices have been held at the former level.

Brewing and Shipping	$1.42½	@1.47½
Choice Feed, per ctl	1.37½	@1.40
Common Feed	1.30	@1.35

OATS.

A much heavier demand for seed oats in the country is expected within a few days on account of the rain, and holders are showing more firmness, though no actual advance is noted. Feed is quiet and unchanged.

Red Feed	$1.65	@1.85
Seed	2.25	@2.30
Gray	Nominal	
White	1.50	@1.55
Black Seed	2.50	@3.00

CORN

The Eastern corn market has dropped resulting in a slight decline in the Eastern stock here, though there is not much business to report. A limited supply of California small round yellow is held around $2.10, but there is not enough of it to warrant a regular quotation.

California Yellow	Nominal	
Eastern Yellow	$1.90	@1.95
Eastern White	Nominal	

RYE

Very little stock has arrived this week and any demand of any consequence would probably bring an advance. With little movement, however, values stand as before.

Rye, per ctl	$1.45	@1.50
Seed	1.65	@1.70

BEANS.

There is not much new to report in the bean market, general tendencies being about the same as for some time past. It is not believed that any appreciable damage was done by the rain, most of the crop being now under cover. The shipping movement on practically all varieties is keeping up in very good shape, most consuming markets taking the normal quantities, and prices are firmly maintained. Pinks are especially strong, with a further advance, while bayos have been marked down a little at the top quotation.

(On wharf.)

Bayos, per ctl	$3.50	@3.60
Blackeyes	3.80	@4.00
Cranberry Beans	3.75	@4.00
Horse Beans	1.90	@2.10
Small Whites	5.00	@5.25
Large Whites	3.10	@3.25
Limas	4.75	@4.85
Pea	Nominal	
Pink	2.85	@3.00
Red Kidneys	3.75	@4.00
Mexican Red	3.60	@3.90

SEEDS.

The rain has brought out a much more active demand for several varieties, and quite a large movement is expected from now on. Alfalfa is steady as formerly quoted, and some hemp is offered a little below the old figure. There is some call for timothy, which was not quoted for some time.

Alfalfa	12½	@15 c
Broomcorn seed, per ton	Nominal	
Brown Mustard, per lb		3¾c
Canary	7	@ 7½c
Hemp	2½	@ 3 c
Millet	2½	@ 2¾c
Timothy	7½	@ 8 c
Yellow Mustard	Nominal	

FLOUR.

An advance in freight rates to the Orient from Northern ports is reported, but this is not likely to affect the local market, which shows little change.

Cal. Family Extras	$5.60	@6.00
Bakers' Extras	4.65	@5.20
Superfine	3.90	@4.10
Oregon and Washington		4.90

Hay and Feedstuffs.

HAY.

There has not been much feature to the hay market lately, both arrivals and demand being very light, but it is expected that the rain will bring about easier conditions, with a possible shading of prices. Some growers have been holding back during the dry weather in expectation of an advance, and a good deal of this hay is expected to be placed on the market shortly. It is not expected that new offerings will find much demand at the prices now ruling. Alfalfa is easy, with large offerings and a rather slow movement.

No. 1 Wheat, or Wheat and Oats	$16.00@17.00
do No. 2	14.00@16.00
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 80c

FEEDSTUFFS.

Everything under this head stands at the old prices, with a steady demand in most lines.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	25.00@26.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	30.00@31.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	29.00@30.00
Rolled Oats	33.00@34.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

With the advancing season, arrivals of some lines of local garden truck are falling off, and what comes in shows damage from the rain. At the same time, more Southern stock is offered. Southern tomatoes are quoted at 90c to $1 per crate; peppers at 2 to 3½c per pound, and eggplant about 5c per pound. The week started with a dull market, but the demand is now picking up. Local tomatoes are cleaning up slowly, and cabbage is lower, with liberal offerings from the North, though there is little local stock to be had. Green peas, beans and summer squash are lower. Some mushrooms are offered, prices being high at present. Onions are well maintained at the old prices, and the high price of garlic has brought in some Italian stock, which is held at 8 to 9 cents.

Onions: New Yellow River, ctl	$1.25@	1.50
Garlic, per lb	7@	9c
Cabbage, per ctl	1.50	@1.85
Cucumbers, per box	75c@	1.25
Green Peppers, box	25@	60c
Carrots, per sack	60@	75c
Green Peas, lb	4@	8c
String Beans, lb	3@	5c
Summer Squash, lug box	75c@	1.25
Okra, box		75c
Tomatoes, box	25@	75c
Eggplant, box	50@	90c
Lima Beans, lb	5@	6c
Sprouts, lb	3½@	5c
Celery, doz	30@	40c
Rhubarb, box	75c@	1.25
Mushrooms, lb	50@	60c

POTATOES.

While arrivals are fairly large, river goods are firmly held, with an advance on fancy stock. It is reported that the space in cold storage houses left vacant by the shortage of apples is to be filled with potatoes and onions, which may partly account for the present strength. Sweets are lower.

Salinas, ctl	$1.90@	2.00
New River Whites	75c@	1.20
Sweet Potatoes, per ctl	1.00@	1.35
Oregon Burbanks	1.30@	1.50

Dairy Produce.

POULTRY.

The local market seems to have had its fill of poultry for the time being, as business is quiet in practically all lines, and prices continue easy, though arrivals do not appear excessive under ordinary conditions. Large broilers are the only line to show any firmness, and fryers are lower. Both live and dressed turkeys are lower, though offerings are not very heavy at the moment.

Large Broilers, per lb	20	@22 c
Small Broilers, per lb	22	@24 c
Fryers, per lb	18	@19 c
Hens, extra, per lb	18	@19 c
Hens, large, per lb	17	@18 c
Small Hens, per lb	14	@15 c
Old Roosters, per lb		12 c
Young Roosters, per lb	18	@20 c
Squabs, per doz	$ 1.50@	2.00
Geese, per pair	2.00@	3.00
Ducks, doz	4.50@	8.00
Turkeys, live, per lb	22	@24 c
do dressed	26	@28 c

BUTTER.

The feature of the week is the first large arrival of Australian butter for Pacific Coast markets. The amount for San Francisco was about 113,000 lbs. It is said to have met with considerable favor at about 30c., and most of it is out of first hands. Prices for local stock keep at about the same level, and with further shipments from Australia expected, it is not likely that prices will be much higher.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32	32	32	31½	31½	30½
Prime Firsts	30	30	30	30	30	30
Firsts	29	29	29	29	29	29

EGGS.

There has been hardly as much fluctuation this week as last, but prices have been gradually advancing, and under a slight shortage extras are up to 57c, although weak at that figure. Pullets have also recovered from the weakness last noted.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	53½	54	54	54	55	57
Selected Pullets	42	42	43	43	43	43

CHEESE.

The only change is a slight advance in Y. A.'s, which are firm at the new figure.

Fancy California Flats, per lb	17½c
New Young Americas, fancy	17½c
Monterey or Jack Cheese	18 @19 c

Deciduous Fruit.

Summer fruits are pretty well cleaned up, and several lines have been removed from the list. Arrivals of berries are light and prices higher, though most of the offerings show damage from the rain and are hard to move. Cranberries are rather quiet and unchanged. Current arrivals of grapes also show considerable damage, attractive lots being scarce and firm at top prices, while ordinary stock receives little attention. The principal feature is the steadily increasing firmness of apples. Newtown Pippins are up a little, and a sharp advance has been made in Oregon stock at shipping points, resulting in a heavy movement here. The movement in other lines is of little importance.

Strawberries, chest	$ 3.50L	8.00
Raspberries, chest	5.00@	10.00
Huckleberries, lb	5@	9c
Cranberries, Coos Bay, box	2.25@	2.50
Cape Cod, bbl	9.00@	9.50
Late Red	10.00@	10.50
Apples: Baldwins	1.15@	1.50
Spitzenbergs	1.25@	1.75
Greenings	1.00@	1.25
Bellefluer	1.25@	1.75
Newtown Pippins	1.00@	1.65
Common	50@	75c
Pears, Bartlett, box	1.50@	2.25
Grapes: Seedless, lugs	1.40@	2.25
Malaga, crate	75c@	1.00
Muscat	45@	75c
Black, lugs	60@	75c
Tokay, lugs	75c@	1.00
Cornichon, crate	65@	75c
Isabella	75c@	1.25
Quinces, box	50c@	1.25
Pomegranates, box	50c@	60c
Persimmons, box	75c@	1.25

Dried Fruits.

There is little new in the local dried fruit situation, values standing as last quoted. Prunes continue very firm in most counts, with supplies light and steadily diminishing, though some concessions are said to have been offered lately by packers for Eastern shipment. There is a fairly good demand from the Middle West, and Eastern buyers are showing more interest. Other lines of fruit are very quiet, peaches and apricots receiving hardly any attention, and packers are in no hurry to buy what is still held in the country; but the amount left in growers' hands is small, and prices are pretty well maintained. Some small lots of seedless raisins are said to have been offered at concessions, but the amount held outside of the Associated Company is getting closely cleaned up, and on the whole the feeling is one of firmness. The New York Journal of Commerce says:

"An easier feeling is reported in the Coast market for Sultana raisins, which, on account of the hitherto strong views of holders, have been getting comparatively little attention from the Eastern trade of late. These offerings, it is understood, come from second hands, the principal packers being, it is understood, closely sold up on Sultanas. The tone of the Coast market for Thompson's is also reported to be easier. In both loose and seeded Muscatels little business is being done at present, but as, according to late Coast advices, one of the chief outside packers is closely sold up and another is negotiating to get in with the Associated, the market has a stronger undertone. On the spot here the movement is comparatively light on seeded stock, but the tone is firm, as stocks available for immediate delivery are small.

"California prunes on the spot are going steadily into consumption on small orders at the quoted prices, with increasing firmness in the medium sizes, as a result of the growing scarcity of these here and on the Coast. Although the local trade still withholds orders, brokers report an increasing demand from interior markets. This demand seems to be chiefly for the large sizes. Chicago buyers are reported to be in the market for forward shipment California prunes in the larger sizes. The jobbing demand for spot prunes continues fairly active in both California and Oregon stock, and the tone of the market is firm, especially on the more popular sizes, which are in limited supply here at present.

"There is little buying interest shown in Coast offerings of apricots or peaches by the trade in this section, but a fair jobbing business in both varieties is being done, and spot prices remain steady on the basis of previous quotations."

Evap. Apples, 1913	6½@	8 c
Apricots, 1913	10	@13 c
Figs, White	3	@ 4½c
Black	2½@	3½c
Calimyrna		4½c
Prunes, 4-size basis	5	@ 6 c
Peaches	4¼@	5 c
Pears	6	@ 7 c
Raisins (in sweatbox):		
Loose Muscatels		4 c
Thompson Seedless		4½c
Seedless Sultanas		4¼c

Citrus Fruits.

The new season in citrus shipments opened with November 1st, and the prospects now are for a total crop from California approximating 38,000 to 40,000 carloads. Manager Powell, of the Exchange at Los Angeles, estimates the crop to be shipped this season as follows: Oranges from north of the Tehachapi, 4500 cars, mostly navels. Lemons from southern California, 4000 cars; valencias, 8000 cars, and the balance navels, sweets and seedlings.

Shipments of navels from the Tulare and Oroville sections are now going East for the Thanksgiving trade. From southern California navels will be shipped about a month later in small quantity. But the big movement will commence after the first of the year.

Every precaution is being taken to fight frost, should it become necessary, this winter. Fire-pots have been secured in great numbers, and large quantities of oil are being stored as precaution in case of need.

At the New York auction last Monday, November 3, valencia oranges brought good prices. The highest price was $7.55 and the lowest $2.85. On the same day at Philadelphia, Florida oranges sold for $1.75 to $3.

With summer fruits cleaning up in the San Francisco market, oranges are getting a somewhat better demand, though ordinary stock is a little lower. New grapefruit is now coming forward in good shape, causing a reduction of prices, but lemons are firm in anticipation of an advance at primary points.

Oranges (per box):		
Valencias	$ 3.50@	6.00
Grapefruit, seedless	3.00@	4.50
Lemons	3.50@	7.50
Limes	4.50@	5.50

Nuts, Honey, Hops, Etc.

NUTS

Values stand as before, almonds being practically nominal and closely sold out of growers' hands, with a good jobbing movement for the holiday trade. Walnuts also are now moving off in good shape.

Almonds, new crop—	
Nonpareils	19 c

I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop—	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

The local demand has picked up a little lately, and as there is little coming in from the country, prices are very firm.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

There is a larger movement than for some time past, with inquiries from other markets, and prices are quite firm at the old figures.

Light	30 @32 c
Dark	28 @30 c

HOPS

Nothing of much interest has developed in the local market, holders in the country being quite firm in their views as to prices on the limited quantity still unsold. A report from London indicates an extreme shortage, with high prices and a very firm attitude on the part of English growers. Record prices are predicted, and dealers say the price in this country will advance as growers come to realize the situation.

1913 crop .....23@27c

Live Stock.

Stockmen are endeavoring to get an advance in beef cattle, but values, though firm, remain about as before, and no change is expected for some time, at least, requirements being fairly well supplied. Sheep have been coming in rather freely, but lighter offerings are expected, and lambs are scarce. Hogs also are scarce and very firm.

Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	8½@ 8¾c
150 to 250 lbs	8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4 @ 4¼c
Ewes	3¼@ 3½c
Lambs: Suckling	5¼@ 5¾c

DRESSED MEATS.

Steers	12¼@12¾c
Heifers	11½@12½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

A few scattering sales are reported, but local dealers say there is nothing new in the situation, and show little interest in offerings.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

Purchases are rather light, but the supply of country hides also is short, and prices remain very firm.

Heavy Steers, over 56 lbs.	15½c
Medium	15 c
Light Steers, under 48 lbs.	15 c
Heavy Cows, over 50 lbs.	15 c
Light Cows, 30 to 50 lbs.	16 c
Kip	15 @16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	26 @27 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.75
Medium	2.25
Small	1.00
Colts	25 @ 50c
Dry	75 @ 2.00

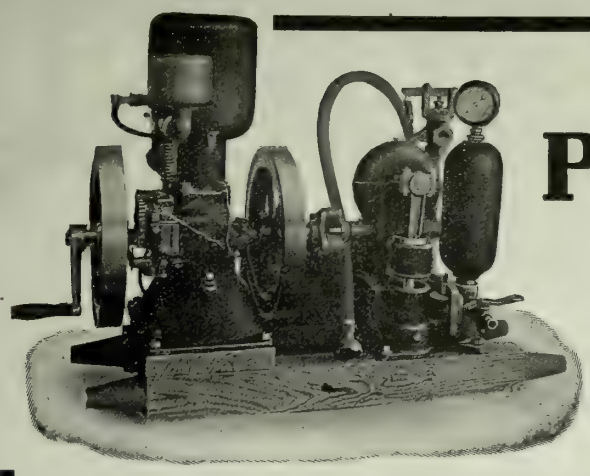
HORSES.

Sales in the last week have shown a material increase of interest on the part of local buyers, and shippers evidently have confidence in the stability of this market, as this week's offerings have been larger than for some time past. The more favorable outlook for hay, etc., is expected to bring out a fully normal demand, especially as requirements for local drayage and delivery purposes are increasing. This week's offerings include quite a lot of heavy drafters, as well as lighter weights, which should bring good prices unless the shipments should exceed the demand.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	100@150
Wagon Horses, 1250 to 1350	100@125
Delivery Horses, 1050 to 1250	75@100
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125



A NEW

Power Sprayer

"The Bean Midget"

A One-Man Outfit, All Complete, As Shown $100

Here's the outfit thousands of small farmers, orchardists and vineyardists have been waiting for—a dependable, reliable, efficient power sprayer at not much more than the cost of a good hand outfit! It's a one-man rig and can easily be hauled around by one horse and an ordinary light wagon or stone boat. Furnished with 1 H. P. Novo engine for one line of hose, but can be equipped with 1½ H. P. engine for two lines at $20 extra. You know the Novo engine.

Illustration below shows the Bean Midget with tank and rotary agitator. This outfit can be had for $122.50. It's all ready to place on your wagon and start. This outfit, like the other can be equipped with 1½ H. P. engine for $20 extra. You can't afford to waste time with a hand pump when you can buy a complete power outfit at such prices as these. For each 25 feet of hose with aluminum rod, nozzle and cut-off, add $7.50. Write about this new sprayer now.

Note These Features

1. Heavy pressure guaranteed.
2. One man does all the work.
3. Light weight makes work easy on rough and hilly land.
4. Will spray 2 to 3 acres a day.
5. Very inexpensive to operate.
6. Thoroughly guaranteed by us.
7. Engine can be quickly released from pump and used for other work.

Send for Catalog 28 A

This is our latest catalog of Hand and Power Sprayers and Pump Accessories. It illustrates and describes the entire Bean Line.

If interested in CENTRIFUGAL PUMPS, ask, also, for Catalog 28 B. There is no pump like a Bean Pump!

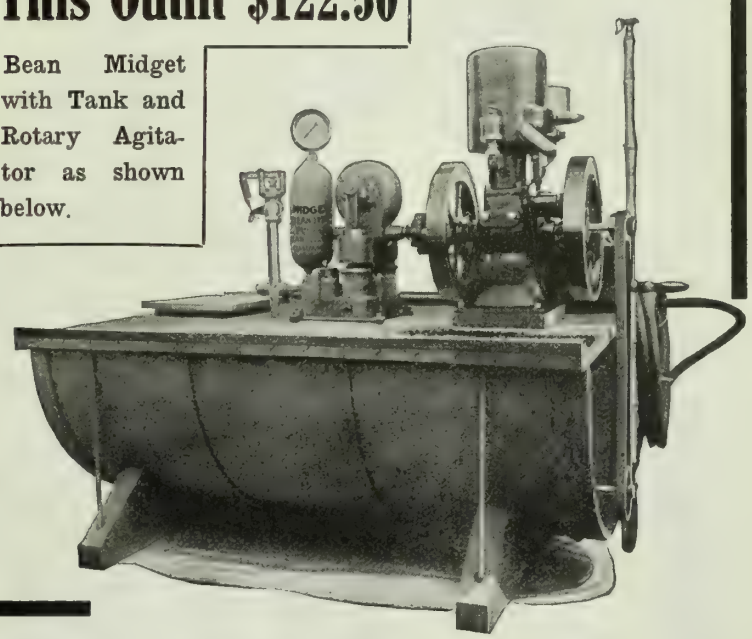
Bean Spray Pump Co.

211 West Julian Street,
San Jose, Cal.

Eastern Factory, Berea, Ohio.

This Outfit $122.50

Bean Midget with Tank and Rotary Agitator as shown below.



TEN THOUSAND HEAD OF TURKEYS WANTED FOR THANKSGIVING

We want the farmers of California to raise ten thousand head of choice turkeys for our Thanksgiving trade. Last year we sold fancy dressed turkeys as high as 30 cents a pound. Commence now to get your turkeys ready for the Thanksgiving market. Have them as large and fat as possible. Write us immediately how many head you will have ready for sale at this time, as we want to keep in touch with you from now on until after Thanksgiving and Christmas. Send us the names of all of your neighbors who have turkeys and about how many head each one has on hand, and we will certainly make it to your object to do so.

Mark and consign all produce you have on hand to us at San Francisco.

W. C. PRICE & CO., General Produce Commission Merchants, 211-217 Clay

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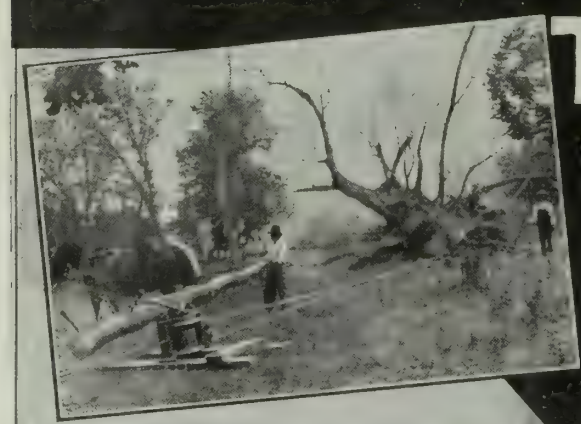

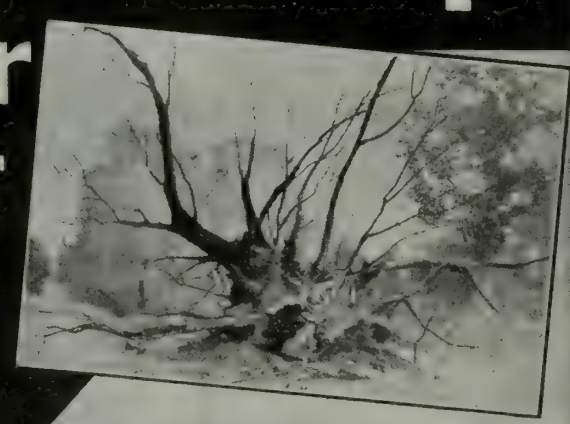

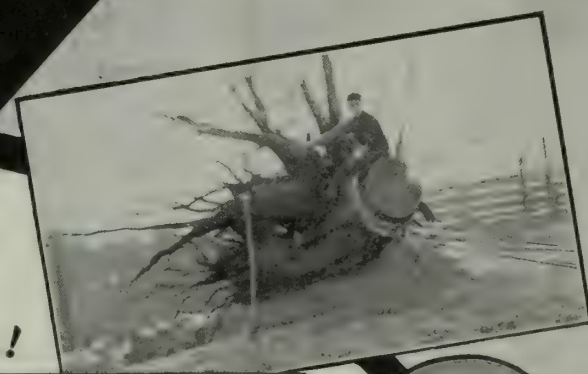

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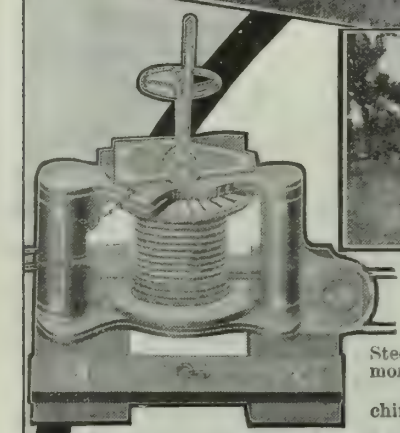

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If any casting of your Hercules All-Steel Triple Power Stump Puller breaks, any time within three years, Whether the Fault Is Yours or the Machine's, I will absolutely replace any such part free of all cost to you. There are no conditions to this guarantee whatever. Any casting will be replaced promptly, whether the machine breaks by accident or through any flaw in workmanship or material.

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To the first buyer in each locality I am making a special price offer this year that is bound to gain the attention and get hundreds and hundreds of orders from farmers everywhere. I want you to get in on this bargain at once. The limited number of these machines won't last long at the price I am making. If you write me at once on the coupon below or on a postal I will reserve one of these machines until I hear from you whether or not you are going to buy. Understand, your request for my book is not an order. I simply want to get the book to you at once, so that you can read the remarkable facts about the Hercules All-Steel Triple Power Stump Puller and how it does such splendid work, making big profits for owners everywhere.

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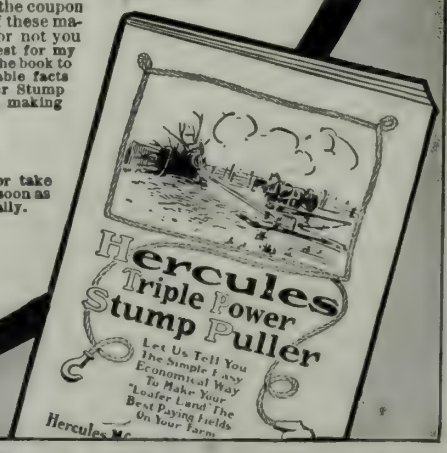

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Vol. LXXXVI. No. 20. SAN FRANCISCO, SATURDAY, NOVEMBER 15, 1913 Forty-Third Year.

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A Fortune From a California Fruit Ranch.

[BY THE ASSOCIATE EDITOR.]

Taking things at a general average, possibly alfalfa and dairying may give greater returns per acre than fruit in California, but when a person gets in the right location, plants the right varieties of trees and then attends to business properly, the possible income is enormous. One of the best illustrations of this is in the history of George H. Hecke, owner of the Yolanda orchard, about three miles south of Woodland in Yolo county, County Horticultural Commissioner, and one of the leading deciduous fruit growers of the State. The illustration is particularly valuable for several reasons. One is that Mr. Hecke has built up all his fortune since his arrival in California 21 years ago, coming here without any capital whatever and with no "pull." In the second place, the orchard might be called diversified fruit farming, in distinction to specialization on a single variety, and for another, all this progress has been made with the whole district just about as it was two decades ago, except that land, through long grain farming, has deteriorated and prices have gone up.

Early Training.—In one way Mr. Hecke's early training gave him a big advantage over what the ordinary young man would have coming to California. People who have no use for scientific training might consider his start made under difficulties. In other words, he was a graduate of agricultural schools of Europe and was well supplied with scientific agricultural education. He first passed through the Viticultural College at Geisenheim, Germany, and then put in a year and a half as a farm laborer in the vineyards and orchards of southern France. He left this work to become a gardener at the Royal Botanical Gardens at Kew, England, the labor paying for advanced instruction in several agricultural subjects. From there Mr. Hecke came to California to work for the Kern Land Company, which was developing a lot of land near Bakersfield. He had charge there of much of the planting of vineyards and orchards. Most of these, by the way, owing to unsuitable conditions have long since disappeared.

Grapes Between Trees at Yolanda Orchard, Woodland.

One year later found him at the Yolanda Orchard, his present home. This is a quarter section in the richest part of Yolo county. This district then was a grain and live stock section, and is so yet, but Byron Jackson, the owner, was establishing a vineyard and orchard. Mr. Hecke, in view of his stated inexperience, was taken, not as manager, but as prospective manager, the former manager continuing for a year, until Mr. Hecke could get a line on methods in general and as used on the place. The situation was rather difficult, as can be imagined, but Mr. Hecke finished out the year all right, doing ordinary farm work, but also keeping the farm books.

From that time until 1904 he continued as manager, resigning at that time to become Expert in Viticulture in the U. S. Department of Agriculture, having in charge the experimental vineyards in California at that time. He still continued to make the Yolanda Orchard his home, however, though another foreman was in charge.

At the end of two years, Mr. Jackson, finding that the place was not returning as big profits as before and wanting to give all his attention to his manufacturing business, decided to dispose of the place. This could not be done to good advantage, and Mr. Hecke resigned his position with the Department of Agriculture to take the place on shares with the option of buying.

At the end of three years he purchased the place, and since then has been both owner and manager. That is, in brief, an outline of progress, and it will be noted that all came without either capital or backing. His folks gave him the best education possible, and after that it was sink or swim.

His salary as manager and his profits from farming have made him the owner of the Yolanda Orchard and of the Copa de Oro Ranch, near Esparto, which contains 200 acres of the finest land in Yolo county, and quite a bit of town and other property. Who says that a man can't get ahead if he goes about it?

Mr. Hecke also became, on his retirement from the viticultural work, County Horticultural Commissioner, is interested in banking, and has other public or semi-public offices. His taxes, by the way, are greater than his salary as Horticultural Commissioner, but there is one thing after another that he wants to have accomplished before leaving the work, so still keeps on.

The Orchard Itself.—Now, the main thing, of course, is how all this was done, or how the orchard is managed and what kind of results are secured. At the start it can be said that the place clears big profits every year, and this is not done at the expense of the land, which rather is improving. This part of Yolo county has an average of about 17½ inches of rain a year and good farming can be done with rainfall alone, as the soil is rich and deep, but irrigation is practiced on this place from a ditch. The supply of water is, however, irregular, and when it comes, it comes in large amounts, which makes unusual methods of orchard irrigation necessary.

Yolo county, in the early days when the place was first started, was heralded as a promising raisin district and raisin grapes took a prominent place on the ranch. In fact, all varieties were more or less experimental. Both trees and vines were put out together, the trees 27½ feet apart and vines between. If fruit did well, all right; if not, the trees could come out and vines go into their places. Trees did do well, and the vines either stayed where they were, or for one reason or other were removed and a fair proportion is now both trees and vines.

The place at present sizes up about like this: Prunes, 60 acres; apricots, 20 acres; olives, 10 acres (in part borders); Muscats, 50 acres; and Sultanas, 20 acres. The total, owing to some ground being used for

(*Continued on Page 461.*)

Pacific Rural Press

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D. J. WHITNEY - - - - - Associate Editor

CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Nov. 11, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.19	3.39	5.36	62	44
Red Bluff	.25	1.79	3.29	78	48
Sacramento	.24	1.43	1.89	72	50
San Francisco	.47	2.14	2.11	72	52
San Jose	.24	1.03	1.60	78	50
Fresno	.00	1.00	1.17	80	52
Independence	T	2.54	1.11	76	34
San Luis Obispo	.00	1.62	2.15	86	50
Los Angeles	.00	.15	1.12	92	54
San Diego	T	.36	.76	82	54

The Week.

It has rained; it is raining; it will rain. That statement ought to quite content us with meteorological history, experience and prophecy and allow us to proceed with other weightier matters, such as making good use of the water. It seems, however, that when one awakens the prophets they do not fall asleep again easily; as, for instance, this:

Dear Editor: A farmer friend gives me your paper and I read it regular. I see that you do not agree with the weather prophets and you slam them good and hard. This is what's the matter: you don't get the right kind of prophets. They don't get near to Nature as the Indian weather prophets do, and so they run wild. My people are sure it is going to be a wet year. They see by what they shoot that the wild birds have grown an unusually thick and heavy covering of feathers during the past few weeks. They say they never see this only on a wet year and that the birds are getting ready for it. This is a sure sign and it won't do any good to slam it. "Stop kicking, just boost," as my friends up to the Chamber of Commerce say.—Tule Jim, Hanford.

Tule Jim warns us not to disagree with the good line of prophecy which he contributes, and we certainly have no desire to do so. His criticism does, however, remind us of a story current in our boyhood, which our younger readers may never have heard. A country preacher, entering upon his sermon, declared that the commentators did not agree with him as to the meaning of his text, and proceeded to give his own interpretation with vehemence and visible signs of distress. Answering a knock on his door on Monday morning, he found one of his parishioners with a heavy burden on his shoulders. After letting it drop heavily on the floor, the man said: "Passon, I wuz to church yestiddy and I heard you say as how common 'taters did not agree with you, so I brought you a bag of my best Peachblows."

We thank Tule Jim for his advice toward optimism and shall profit by it. As to his prophecy, it may stand until the ornithologists kill a thousand birds and show that they do not have any thicker plumage than usual. But what does it all matter, anyhow, so long as it keeps on raining.

A Fullness of Prunes.

At last our California prunes are in the world's eye, as they deserve to be, but we must admit that the world is apt to be misled by the figures which are current. For example, the daily papers are printing a dispatch from Washington to the effect that "figures compiled by the Bureau of Foreign and Domestic Commerce show that during the fiscal year of 1913 more than 118,000,000 pounds, valued at $623,000,000, were shipped across the seas. In 1898 the exports amounted only to 16,000,000 pounds." The value given to our prunes in this dispatch is nothing less than startling. Probably two ciphers have been added, and the total would then be about six and a quarter millions, if the value is a fraction over five cents per pound. But the volume of the exports is great and the width of the distribution is beyond anything the pioneers of this industry dreamed of. The Washington report states that more than sixty different countries are represented among the prune purchasers from this country. Germany leads all the rest with 49,000,000 pounds to her credit. The Netherlands was second with 16,500,000 pounds, more than the United States exported in 1898. Other countries were England, France, Canada, Australia, India, Siam, the Philippines, Egypt, Africa, Dutch Guiana and British Honduras. During the same period raisin exports increased from 3,000,000 pounds in 1898 to 28,000,000 pounds, valued at $1,500,000, in 1913. This, of course, does not represent the value of the raisin product, but indicates that the American people eat a larger part of our raisin product than they do of the prune product. Our prunes are no joke abroad.

Our Hornets' Nest.

We had an apprehension that we were likely to get into trouble when we asserted last week that the advancement of agriculture depended upon the country-born. We quieted our nerves by inserting the proviso that California agriculture owed more than any other State, to city people who had taken to farming as a sober second thought—hoping that all our ex-city readers would catch thereat and believe that we were considering each and all of them, jointly and severally, as constituting the exception which proved our rule. It does not seem to work that way, and we are likely to have as much trouble with our protestants as President Wilson is with the critics of his Mexican policy—relatively, of course; that is, in the ratio of our respective parishes of kickers. To settle with the personally aggrieved, all we can do is to offer to file, with the local county clerk, an affidavit for each of them that we consider him a pillar of the local farming interest and that the reason why he is such, in fact, the reason why he lives at all, is because he was born in the city. This, it seems to us, ought to allay personal aggrievement and establish the individual's truly rural character. Perhaps we ought to offer some sort of collective atonement for the offense against the whole class of city-born farmers who are helping to make California famous. To do that, we choose the Kentuckian's judgment of brands of whiskey: "all good, but some better than others."

Which City Men Make Best Farmers?

The trouble in the foregoing paragraph might quiet down if left with the inspiriting conclusion which ends it, but we seem impelled, somehow, to commit the further indiscretion of trying to tell which city people make better farmers than others. Speaking from length of experience and width of observation, we cherish the conviction that the most successful people who go from the city to the country are of the professional classes. This may jar some of our country readers who were taught to believe in their youth that education which fits for professional life, directly unfits for agriculture. Our observation is that this is wrong, and we will not stop to satisfy ourselves whether it ever was right or whether educational policies have changed or whether farming aims and purposes themselves have changed. We are inclined to the conviction that the cited changes have much to do with it; that the professional training has much more to do with things and lives than formerly, and that the farming purposes now include much more than grubbing something to eat out of the soil by main strength and awkwardness. However this may be, it now seems to us clear that the city men who can most safely undertake agricultural investment and enterprise are those who have had good professional training and successful experience in professional activities, and we include the whole range of modern professions, from sky-piloting to engineering. There is certainly some breadth of view and attitude toward a farming problem which those who are successful in the professional lines can better command than those who have given their time to the minor commercial activities, at least. It is true that we sometimes find them rather impressionistic, but the successful farmer is also a good deal of an impressionist, and often succeeds by what he omits rather than by what he commits. We also find notable successes among master workmen in mechanical lines who change to farming, and not a few sailors who seem to turn naturally from plowing the sea to mowing the lea. Here we have breadth of view again and readiness of recourse. The city men who, after trial, care least for rural life are those in narrower trades and traffics whose minds seem to have become so filled with one set of details that they cannot acquire the farming style of thought nor the farming set of details. All of which seems to indicate that those men are best to change to rural activities who have breadth of view and what is called versatility of thought and action—to work more by original conceptions than by traditional formulas. Rural life also appeals more strongly to the higher than to the lower city classes.

Wiring Crop Reports.

The present administration of the U. S. Department of Agriculture is making commendable exertions to do something new and to keep along the development of government help to the farmers which some years ago placed our government work for agriculture in the world's front rank, except, perhaps, in social and financial lines which reached greater development abroad. The recent experiment of telegraphing crop news instead of circularizing them by mail proved very successful and is now to be extended to cover the whole country. Beginning with the November crop report, crop conditions in each State will be wired to the central weather station within that state for distribution. Under the plan adopted the general summary of the crops will be issued in Washington for distribution by telegraph. The condition reports for the different States, however, will be telegraphed to the central weather station within each State for immediate distribution by mail. It has been found that these State condition reports are of great value to the farmers and producers in marketing their product. These crop re-

ports will not be supplied to individuals, but are only mailed to accredited publications, for by press publication they will reach thousands, to one who could be served by mail. All this is very good so far as it goes, but in a State like California, with so many crops not grown elsewhere and with relatively less interest in the common staples which lead in other States, these reports must be of minor value. We shall probably never have satisfactory reports of crops of greatest local interest until the State adequately provides for them. Recent reports have been so much of a joke or an occasion for conflict that little respect can be expected for them. Statistics of our crops as they grow should receive the constant attention of the best possible expert branch of the State government that can be organized.

America to Uplift Ireland.

As fitting recognition of our debt to Ireland for so many tall and kind-hearted policemen, and for the many other types of desirable population which we have received from the Emerald Isle, a system of recompense seems now to be organized under the new tariff law which is being received with great thankfulness in Dublin and other centers of Irish industry. In a column-long dispatch of satisfaction are these words: "We knew that the law was generally favorable to Irish industry, reducing many important duties and abolishing others, but nobody knew exactly how his own business was to be affected. It has now been found that in several respects the law confers great advantages on Ireland; indeed, with the exception of Canada, no country is likely to benefit more largely than our own." It would be cruel to withhold thanks that Ireland is to be helped to happiness, but it will possibly be somewhat of a strain upon the well known home-love of Irishmen who are farming their own lands in this country to read that "America is admittedly no longer self-supporting in the matter of food products. She has come into the world market as a consumer. Under the new law such articles as eggs, fish, bacon and hams, fresh fish, mutton and potatoes will be free of all duty. Both by her fertility in these products and by her geographical situation, Ireland occupies a position of supreme advantage. With the markets of Great Britain on one side and the still larger markets of the United States on the other, her future as one of the most prosperous agricultural countries in the world should be well assured. Henceforward it looks as though the United States will take from Ireland all the bacon, fresh beef and potatoes which she can produce and for which she can find means of transit." Really, following along the glowing lines of the writer, it would almost seem that Irishmen should not have come to this country; they ought to have staid at home and developed trade with the American Indians. The United States, the greatest agricultural country in the world, in fact and in potentiality also, is to be fed by Ireland! It is surely a great scheme.

More Money for Sugar Beets.

It is, of course, gratifying to have some sign that the beet sugar industry is not to be knocked out of California, and we hope it is a true sign thereof that is given by the announcement from Alvarado in Alameda county, the site of the oldest of the existing factories, that the stockholders have "decided to keep the factory going, although the company has decided to quit raising beets themselves. It has also been decided to raise the price of beets, the company agreeing to pay $6 per ton at the factory." We hope the scheme will go through on that basis. Growers should have had all along more for their beets than they have been paid. The margin of profit to the factory has been rather large, if the size of the investment and the uncertainty of regular running for a long period should not call for too great sinking or reserve funds. That is, we believe if the regular development of the business toward a full home supply of sugar should have been possible, the beet growers should and would have had a greater share of the value of the output. Things are, however, now so uncertain that the action of the Alvarado stockholders may be an effort to see whether their cargo can be saved by sailing closer into the wind rather than by running before it. There are some phases of the sugar problem which must be worked out by experience.

Queries and Replies.

The Bean Belt.

To the Editor: I desire to take issue with you in regard to one statement in your bood on "California Vegetables" concerning bean culture in California. I have reference to your statement to the fact that nine-tenths of the beans are raised in one of our southern California counties. I maintain that Stockton and San Joaquin county are deserving of more recognition as a bean market and claim that Stockton is the largest shipping point in the State.—Reader, Stockton.

You do not know beans. The statement in "California Vegetables" is not that one county but that "six counties in Southern California produce perhaps nine-tenths of the commercial bean crop of the state." This is correct as a generalization. There are three counties ahead of San Joaquin, according to the U. S. Census report for the production of dried beans in 1910, namely:

San Joaquin,	13,954 acres, producing	352,157 bu.
Ventura,	58,574 acres, producing	1,313,156 bu.
Orange,	22,186 acres, producing	402,951 bu.
Sta. Barbara,	23,355 acres, producing	367,385 bu.

Of course, the Stockton region has done admirably in developing bean production and makes a high acre-average yield, but still has some paces to take before it catches up with counties which have been great in this line for the last thirty years or more.

Our Gardens of Eden.

To the Editor: I wonder if you are aware that the millennium is only 100 years away and that the second Garden of Eden is to be located at Los Angeles? If not, I send a circular which will carry to you this delightful news.—C. E. Thorne, Wooster, Ohio.

We are glad that Director Thorne of the Ohio Experiment Station, who has done such a notably valuable work in expounding rational fertilization for the soils of his State, is taking an interest in California, although it be on the Edenic side. The establishment of Gardens of Eden near Los Angeles is no new thing: nor is the project a new thing for California as a whole. We have altogether more Gardens of Eden already growing than the writers on pre-historic times were ever able to locate, for they could only find six in Asia Minor, while no doubt six hundred could be eligibly located in this State, and plant growth under irrigation is so rapid and satisfactory that if the millennium should be postponed a hundred years, the trees would be so tall that projectors of towers of Babel would be laughed at. We would also suggest to Director Thorne that, when he wearies of his strenuous work, he should come and live in one of these gardens, which are just as good for the race to enjoy its mature verdure as to honor as a birthplace.

Grasses for Lands with Some Summer Moist

To the Editor: Will you kindly recommend to me grasses which will grow on my homestead and make good stock feed. My place is located in the mountains of Madera county at an elevation of about 3000 feet. The soil is clay and a slate formation. The land was all burned off and I wish to scatter grass seed over the steeper hillsides. They were covered with wild oats before.—C. N., Madera county.

Only such trial as you mention can tell you whether you can get any pasture grass to hold on or whether you must depend upon wild oats or other annuals. The grasses which are most likely to succeed on land which has moisture enough to support any perennial grasses are English rye grass, orchard grass, tall oat grass, red top and Hungarian brome grass. Small quantities of the seed of these plants can be furnished by any of the seedsmen, and those which accept the conditions will show you the fact and the others will disappear.

The Pea Aphis.

To the Editor: Can you tell me whether the aphis which greatly damaged the sweet pea crop the last two years will be likely to do as much damage in a season with normal rainfall; or if we may expect heavy damage from this pest from now on?—A., Gilroy.

The pea aphis certainly has to be reckoned with in the future, and we do not yet know just how. It is a growing evil in the coast district, not only on sweet peas, but upon garden and field peas. Our entomologists will have to tak
riously, and the problem is not eas
would be the natural protectors of t
they, unfortunately, do not becom
enough early in the season unless transplanted from winter quarters as the State Insectary at Sacramento gets them by the millions from under the snow in the Sierra Nevada and sends them to the cantaloupe growers in the Imperial valley. Pea growers should apply to Dr. A. J. Cook, State Horticultural Commissioner, Sacramento, and get a share in this distribution. Aphids are often greatly reduced by drenching showers and may be less in seasons of normal rainfall, as you suggest.

Onion Growing.

To the Editor: Will you kindly inform me: (1) What variety of onion is most popular for commercial production in California; (2) whether it would be the best adapted to early spring planting in a clay adobe soil containing some humus and a trace of sand and fitted for irrigation if necessary; (3) whether onions can be expected to do well commercially in such a soil, and if so, what variety is best; and (4) is it possible for one industrious man to care for two acres of onions without extra help except for emergencies? I have been told that two acres is a large amount for a man to try on account of the enormous amount of labor involved.—P. J. D., Glen.

Onions are successful on a strong, retentive loam, which is probably what you describe as "adobe with some humus and sand." Adobe is not a good descriptive term, for it means such a loam in some places: in other places it means a very tough, rebellious clay. Onions will grow on both places, but they are harder to handle on a hard, cracking adobe. The onions chiefly grown are Red Wethersfield for early and Yellow Danvers for main crop. Growing the seedlings on a sandy seed bed and transplanting when three or four inches high is the best way to get a good stand and escape a lot of labor in weeding. Full particulars as to methods of growing onions are given in our book "California Vegetables." A man can handle two acres well enough if he knows how to make his head save his back in planting and cultivation.

Tropical Fruits in California.

[By D. W. Coolidge of Pasadena at the California Nurserymen's Convention at Fresno.]

Will tropical fruits grow in California? My first impulse, which is always honest, leads me to say "No," and then when I stop to consider the sums I have invested in Mango, Mangosteen, Star Apple, Sapadillo, Papaya and other tropical fruits, I say, "Sure, tropical fruits will grow in California," but you must give them minor protection in the way of a double lined glass house, heated by a 263-horsepower steam boiler. Seriously speaking, no part of California lies very near the tropics and strictly tropical vegetation will have a hard time of it.

The Avocado.—Now there may be some exceptions. In fact, we know the remarkable exception is the avocado. This fruit really is indigenous only to the tropics, but in the early times it was carried to Mexico and it is found growing there at altitudes whose temperatures are far below that of the tropics, and it is these varieties that can and are today being successfully grown in California.

I doubt that strictly tropical sorts, transplanted directly from Hawaii and Central and South America will ever succeed in California. I have grown the Hawaiian sorts and seen them freeze to death with a temperature of 28°. Paradoxical as it may seem, the thin skinned varieties are the hardy ones. We had in our collection last winter twelve varieties of the thick skin fruits and eight of the thin skin, and while every one of the thick skins froze to the ground, none of the others were seriously injured.

The question is frequently asked, "How much freezing will the avocado stand?" As I have said, I have never seen a thick-skin variety that will stand a lower temperature than 28°, especially in the younger stages of its growth. The thin-skinned varieties, when the tree is six or eight years old, have been known to endure a temperature of 12° without serious injury. In our gardens last winter we had a temperature of 18°, and trees one and two years old stood up, and some of the four-year-old trees were not nearly so much frozen as the hardiest citrus plants in our collection.

Which Avocados to Grow.—Now a word as to the merits of the two types. People returning from the tropics really know but the larger fruits. I have eaten fruits from Hawaii, Florida, and tropical Mexico and also many of the smaller ones locally grown, and I do not hesitate to state that some of the smaller thin-skinned varieties are the equals in quality to any of them. Furthermore, it is a well known fact that the smaller thin-skinned fruits come into fruiting much earlier and will produce on an average nearly double as many fruits per tree as the larger ones, and I state without hesitation that in most parts of California where the avocado is to be grown, the smaller thin-skinned varieties will be the fruit of the masses. I do not for a moment wish to underestimate or belittle the value of some of the large fruits, and I know there are sections in southern California where they can be safely planted, but in any locality where the temperature goes as low as 24° I would not advise planting them. I will also admit that there are many of the smaller thin-skinned fruits that are almost worthless, first, because of their size, and again, because some of the purple varieties have, to a degree that is unpleasant, the taste of anise that is found in the foliage of most of the thin-skinned varieties, but varieties like Fowler, Blake, Harmon and Ganter, all green sorts, are delicious in quality and possess no objectionable features. Among the better of the purple varieties are the Northrup and Chappelow. Within a few years, I am convinced that we will have seedling varieties that will produce fruits superior to any of those that we now have, taking into consideration their extreme hardiness, their bearing quality and last but not least, quality of the fruit. I do not think any mistake will be made in planting such varieties as Fowler, Blake, Harmon, Northrup or Chappelow. The Fowler and Northrup can be said to be almost always in fruit, both of these varieties blossom in the fall and spring, and I have seen good fruits in every month from March to December.

The Feijoa.—For eight years I have been watching a fruit which was introduced supposedly as a tropical or semi-tropical fruit, but we find it does not belong to this class whatever, but I am going to say a few words concerning it, although it may be considered a digression from my subject. By the way, this is a fruit that will stand the warm zephyrs of the San Joaquin valley. Feijoa, coming from Uruguay and southern Brazil, is a fruit of extreme hardiness. I have in mind one plant that has stood a temperature of 4° above zero without any injury whatever. I know of other plants growing on the desert that have endured a week's temperature of 115° without any injury, so we can safely class it as a hardy fruit. So far nothing but seedlings have been grown, and these vary greatly as to bearing qualities and size of fruits, but there are individual plants growing in our section that fruit regularly and produce fruits of a good size. Within a few years we will have plants of the Feijoa producing fruits on the average as large as an ordinary hen's egg. So much has been said about the Feijoa that it seems that it is not necessary for me to dilate on the quality of the fruit, and yet I want to add that it is so good and so generally liked that there is reason for the belief that it is to enter into our commercial horticulture. The fruit ripening in December gives it a status that no other fruit of its character has. I have kept the fruits in good condition for four weeks after picking, this would permit its transportation to the most distant markets.

As my subject is tropical fruits, I suppose I am not permitted to speak of the ornamental value of the different plants, but I cannot forbear saying in regard to the Feijoa that it is one of our finest ornamentals, with its grayish green persistent foliage and charming white and red flowers.

Palm Fruit.—A really fine fruit to eat fresh, or especially fine for making into jellies, is produced on the Cocus Australis type of palm. I am informed that in South of France many varieties of this palm are grown for their fruit. I was fortunate in being able to get a few samples of the fruit which are here exhibited.

Queensland Nut.—A month after the late cool unpleasantness in southern California I picked from a tree in Elysian Park in Los Angeles a quart of fine nuts of that superb nut-bearing tree, Macadamia. The Queensland nut, for such it is known in Australia, from whence it comes, in quality has no superiors, and I doubt if there are any equal to it. The fact that it sells in the English markets for ten shillings or $2.50 per pound seems to warrant the belief that it is highly considered by those people. This tree up to the time it reaches four or five years of age is generally pretty tender, and will not endure much freezing. But the tree spoken of in Los Angeles stood in a very cool location, surrounded by rubber, avocado, acacia and other trees which were badly frozen, while the macadamia was almost untouched. There are in Santa Barbara and Montecito perhaps a dozen bearing trees, that produce regularly and I see no reason why this should not become one of our leading commercial nuts.

The Date.—Perhaps one of the greatest tropical fruit industries to be developed in California is the date. In Coachella valley there are today 10,000 trees planted in orchard form, 20,000 off-shoots that are being rooted for planting in the near future. There are about 25 acres of producing trees. The average yield of trees from five to eight years old is about 100 pounds, they begin bearing at four years. In the present season there has been produced in this valley about 25,000 pounds, which have practically all been contracted for at $1 per pound. There is no questioning the fact that when the American date is thrown on the market in quantities it will entirely supplant the foreign product. The three varieties so far planted and giving the greatest promise of success are Deglet Noor, Tafazwin, and Itima.

Sapota.—Casimiroa, or white sapota is a Mexican fruit of considerable hardiness that is interesting in collections, but does not impress me as being of much commercial value. The fruit being soft, would not stand distant shipment.

Carissa.—Some day there is going to be introduced a fruit that has nothing to equal it in appearance and a fruit of really superior edible qualities. I refer to carissa. This is a fruit about the size of a Damson plum, of the most beautiful glossy crimson color. It is so attractive that it would sell in any market if it had nothing but looks to commend itself; it is, however, a really delightful acid fruit that is very nice sliced fresh or made into sauce or jelly. It comes from the coast region of South Africa. The varieties we have, when planted in the interior are almost sterile and produce few if any fruits, but there are in some localities individual plants that fruit quite heavily, and it is from these that our material for propagation must come. Some of the carissas will not stand a very low temperature, but it is about as hardy as the guava. This again is another plant of great value as an ornamental, its glossy green foliage is scarcely less attractive that the large snowy white Jasmine scented flowers.

Guavas.—While many varieties of the guava are found growing in our section, few of them, to my mind, have any real value. The strawberry guava type is the hardiest, and by all odds the best, and all that have had opportunity to test it agree with me in saying Guava Lucidum is the best. This is a yellow strawberry guava of a distinctive flavor, and were it not for the large seeds possessed by all guavas, would be considered an ideal dessert fruit. This particular variety, too, is most prodigious in its bearing qualities. I have known a plant three years from seed to produce more than a quart of fruit, and we have today in our nursery, plants eighteen months from the time the seed was placed in the ground that have a number of fruits on them. The fruits will average an inch or more in diameter, always round and are of a bright lemon color. The ordinary strawberry or red guava I assume is too well know for any extended remarks, but yet it is worth while growing for jellies. Another desirable strawberry guava is Guava araca. This in appearance is similar to lucidum, but is much later. While lucidum ripens from September to November, I have never known araca to ripen before the the middle or last of December. This one is the more susceptible to frost.

Eugenias.—Eugenia Pitanga is a delightful little acid fruit that I am sure you would all like, but like the carissa so far has not proved prolific. Eugenia Jambos or rose apple is an interesting fruit as a novelty, being in appearance something like the loquat. It has sweet fruits of a highly pronounced rose flavor and might have value for flavoring jellies, etc. The tree is quite tender and should not be planted where the temperature goes much below the freezing point. A small low growing shrub, evergreen and valuable as an ornamental, but which I consider extremely valuable as a fruiting plant is Eugenia Ugni. This is sometimes called the Chilian guava. The fruits are about the size of a huckleberry, the construction of the berry is quite similar also, but the flavor is really very delicious, a suggestion of a strawberry and pineapple are noted. I have seen hedges of this plant in the bay region near San Francisco, full as it could be of fine ripe fruits. I believe that in our warmer interior valleys that it can only be made a success if planted in shady situations and given plenty of water.

Mango and Papaya.—Two strictly tropical fruits that have fruited in southern California are the mango and papaya. Both of these growing at Hollywood have been fruiting for a number of years. They are seedlings and of poor quality, but the fact that they will grow at all leads to the impression that some good varieties equally as hardy may yet be found.

Carica papaya is a wonderful plant in a good many respects. You perhaps know that it is the plant from which vegetable pepsin is obtained. A friend of mine who spent some time in Mexico states it as a fact that wrapping the toughest kind of a steak in the macerated leaves and allowing it to remain for an hour would make the steak as tender as veal. She states that at one time they had so wrapped a roast of beef and forgot it for twenty-four hours. When they took it out it was completely digested, only fit for bullion. I have also seen the statement that if a counterfeit bill were wrapped in papaya leaves it would make it legal tender. I would advise some of my tough nursery friends to be careful how they handle this plant.

People returning from the tropics go into ecsta-

cies over the mango and carcinia or mangosteen. With the possible exception of the mango, I don't believe either will be grown here.

Custard Apple.—Anona Cherinoya, commonly called custard apple, has been grown for a number of years in southern California, and I have known individual fruits to sell at $1 each. This is a fruit of really delicious character, but like the sapota, is too soft to admit of any distant shipment. The tree is quite tender and will not stand temperature much below 28°.

Kai Apple.—Aberia Kaffra or kai apple is one that it seems to me is worth looking into. The fruit is about the size of a green gage plum, of a yellow color and has a distinctive flavor that commends itself for purposes of jelly making or preserving. The plant is quite hardy and will stand quite a little freezing; it is, however, dioecious, and in planting a single plant one may get only the male, which would not produce fruit. The plant is a large thorny shrub of considerable ornamental value and is worth experimenting with. I have seen in southern California an acre of pineapples growing in the open, but they did not look particularly happy, and I am sure they were not a commercial success, because they were not long cultivated.

Cashew and Star Apple.—Anacardium Orientallis or cashew apple, is a most interesting tropical fruit. Its peculiar habit of developing the seed on the outside of the fruit gives it a character known to no others. The pulp of the fruit is considered eatable, but the seed is what is of commercial value, being a delicious nut when properly roasted.

Chrysophyllum Cainto or star apple is a tropical fruit that is much esteemed where it is grown. I am sure this plant is entirely too tender for any part of California.

Chicle.—Another fruit that sojourners in the tropics frequently speak of is Achras Sapota or Sapodilla. This is a valuable tree in the tropics, because from it is obtained chicle, the foundation of all chewing gums.

Cocoloba Uvifera, the shore grape, is also said to be of value where it can be grown.

How to Try Tropicals.—I have tried to grow all of the fruits mentioned, but have had no success whatever with these strictly tropical sorts. I believe, however, for the faddist who wants to grow something that his neighbor does not have, that it would be possible by erecting a frame over the plant, covering it with burlap or building paper, and placing a small lamp inside for the few nights the temperature reaches freezing point, he could grow most of them. It is thought, however, that frost is not the only element of failure in growing tropical fruits in California. There is a large class of plants that require humid atmosphere during growing season, and for this reason they will not succeed in the arid summer climate of California.

A taste for most tropical fruits must be acquired. The consistence of the flesh is generally different from the fruits of the temperate zone. Some of the fruits are filled with fibrous hairs which make it objectionable. This reminds me of the story of the fellow that went into the restaurant and called for a dish of apple sauce. After tasting it, he said, "See here, waiter, this apple sauce has hairs in it." The waiter said: "I don't see how that could be. There might have been hair in the ice cream, because we shaved the ice. There might have been hair in the bread, because the flour was made from bearded wheat. And there might have been hair in the honey, because we took it out of the comb. But I don't see how there could possibly have been hairs in the apple sauce, because the apples were Baldwins."

A Fortune From a California Fruit Ranch.

(*Continued on Page 457.*)

both trees and vines, will be more than the actual area of the place, all of which, except right around the house and barns, the drying yard, etc., is in fruit or vines.

Vine and Fruit Rivalry.—An unusual feature, of course, is having both fruit and grapes on the same land. It would be impossible to do this without irrigation, but works all right with it. Most table grapes would not do well under trees, as they would not color well in the shade, but Muscats do all right, though the shade delays ripening.

As there is a big head of water, the flooding system of irrigation has to be practiced on very large checks. The levees are about 80 to 120 ft. square. Originally they took in up to 20 acres, but the erection of other levees make them smaller now. The soil is a medium to heavy loam, and the water stands for several hours at an irrigation. It is not, however, very good for the vines, as it makes mildew start, for the ground is too moist to get on to sulphur for quite a time after irrigation. However, good crops are received in spite of this. Furrow irrigation would be better in many ways, but would be much more expensive and is impossible with such a large head of water. The cost of the water averages about $5 per acre per year.

From the Muscats this year there were picked by the first of October, 140 tons, with 20 or 30 tons yet to come. These, by the way, were sold to Winehaven for the making of grape juice. Usually they are dried, but Mr. Hecke, in hope of rain, guessed a rainy fall, instead of which it has been one of the best drying years in history. Sultanas in 1912 gave 28 tons of raisins, and 30 tons in 1913 (a few Thompsons being included), which are about average crops.

Apricots in 1912 gave a little over 25 tons, and this year a shade less than 10½ tons of dried fruit.

Prunes, which are the best fruit on the place, or in the district, in 1911 produced 185 tons dried, in 1912, 300 tons, and this year 160 tons. Sizes were, in the years of smaller crops, about 50 to 60, and about 60 in 1912. The average crop is considered about 150 tons. These yields indicate the productivity of the place and the success of the orchard.

Good Bookkeeping.—Every statement of yield or prices is based on exact figures. In the first place, under absentee ownership, a definite record of expenditures was kept as a matter of course. Under private ownership it is kept as a matter of convenience and for the great value of records. An account is kept of the work done on every job every day so that the cost of every piece of work and every part of it is known, and the cost of cultivation, of pruning, picking, harvesting, or what not, can be figured out at once. Two checking accounts are kept at the bank, one for labor expense, one for other expenses. The bookkeeper, at the close of the month, classifies all expenditures, and at the end of the year the grocery bill, feed bill for stock, or every other thing can be told at once. The amount of bookkeeping necessary is also small, owing to the system followed.

Good Care Taken.—The whole secret of success in the place is in keeping things up to the notch. All the cultivation required is given, all the pruning, and whatever ought to be done is done. No work is slipped over for lack of labor. There are about 12 to 15 men employed all the year round, and when picking or other special work is on, up to 75. It can be seen that this gives steady work at the rate of about one man to 10 or 12 acres, and means pretty intensive culture. The actual work is under the direction of a foreman, who is wholly in charge of the men under him, though Mr. Hecke lays out every day just what is to be done and plans all methods.

Good irrigation is one of the main features. Water is not as abundant as it might be, and all that comes is put on, followed by good cultivation, which keeps trees and vines in first-class condition. About a foot of water is put on at an irrigation. Last winter, repairs to the canals kept the irrigation company from supplying water until spring, but as soon as possible a heavy irrigation was given, which wet the soil down about four feet, though not enough to connect with soil moisture. By the time the trees had used practically all of this up, another irrigation was possible, three irrigations being given altogether. As a result the trees look as green, vigorous, and strong as if it were midsummer, or rather, considering the lateness of the season, as if moisture conditions were all that could be desired all the time. There is not the slightest doubt but what good, even production is due almost entirely to this irrigation and cultivation.

Fertilization and Other Care.—Another very important point is heavy fertilization with stable manure. The soil itself is very rich in plant food, and the manure is not put on for the plant food it contains, but for humus. The manure is hauled from town, in spite of the 3½ miles distance, and about 500 loads are put on a year. Four teams after fruit harvest is over are kept hauling manure. There is also some chemical fertilizer put on in spring for good measure, 200 lbs. nitrate of lime an acre this year, for example.

For years he has had all the manure hauled from town that he could get, and people used to say that he was crazy to waste his money, yet he brought back run-down orchards by this means and made them produce heavily, and fertilization and good care are responsible largely for financial and other success.

Cover crops also have been grown during the last five years, with good results when the moisture to start them in time was available, and not so good results otherwise. In the orchard vetch with a little barley for it to climb on is planted. In the vineyard burr clover is grown, as that is easier to plant where a drill cannot be used and easier to plow under. These crops give both nitrogen and humus and appear to be great soil improvers.

When it comes to the prune trees, they are as fine as can be found anywhere, due largely to both soil and the care, but there is no doubt but what distance of planting and pruning has been effective. Most prune trees are too upright and dense. They almost have to be when only about 20 feet apart, while here the interplanting of vines made them go in 27½ feet, and that gives them air and room for spread of branches.

The whole orchard, with the exception of the apricots, which are not well suited to conditions, produces uniformly large quantities of fine fruit, and even the apricots are profitable, though not up to the others. Yet if a new orchard had to be planted on the lines of the old, the apricots would find a place, though Muscats would not. Having a variety of fruits is often better than having but one, although the profits may not always be as large, the income is more regular and the work runs much more smoothly.

On account of Mr. Hecke's official duties, his public interests, his former connection with the Department of Agriculture, and his large interests as a fruit grower, a large circle of friends in the agricultural world, official and otherwise, are guests at his home when called to Yolo county, and his time as a fruit-grower is shared with a direct and indirect public service to the fruit and agricultural interests of the state.

The whole work in building up the place was done in the time it takes a person to attain voting age, with only the start of an agricultural education, less advanced of necessity than recent agricultural discoveries make possible. It was done while much time was being given to public service, and, what is greatly to the point, the opportunities are practically the same now as then, or even better. At all events, although the price of land in the district has gone up, farm practice is just about as it was when the start was made, and the soil, under those methods, even less productive.

GETTING OUT STUMPS.

To the Editor: I have some stumps about 2½ to 3 ft. across, live oak, which I wish to get rid of. Have heard that by boring holes with an augur and filling with saltpeter they can eventually be burned up without digging out. Is this so, or is there a better or quicker way?

Dixon. G. W. M.

[We should never trifle with stumps in any such way. We have heard of this prescription all our lives, but have never yet found a man who had himself done it, although we have found many who had "heern tell of it." Get out your stumps with a good "stump puller" or blow them out with dynamite.—EDITOR.]

Farmers Need Low Interest.

At the Farmers' Congress at Plano, Ill., last month about 3000 are reported to have been in attendance. One of the most significant addresses, and one that evoked most discussion, was that of President Charles E. Sanford of the Congress, in which he summed up the farm credits problem. He traced a definite connection between the increased cost of food as felt by the people of the cities and the increased cost of money as it is felt by the farmers, who need cheap loans to get improvements cheaply to produce food cheaply, and thus eventually lower prices in cities. Extracts from his speech follow:

"Long time loans at low rates of interest certainly ought to be available to the farm owners for permanent improvements. But that loan is not enough. Forty per cent of American farmers are landless. They are tenants working other people's land. But the country depends on them just as much for the produce of the farms they work as if they were producing from their own soil.

"Therefore, they, too, must be helped. And a system of personal credits should be arranged so that these landless farmers may not be obliged to work with insufficient equipment. It is to everybody's interest that all the farms everywhere shall yield the utmost. So the easier we make it for the farmers to get working capital the easier we make the problem of living for the nation as a whole."

GIVE THEM BORDEAUX.

To the Editor: From the writer's observation during the summer and fall in peach and apricot orchards throughout the State, indications point to the fact that the so-called peach blight and Gumosis will do considerable damage to the stone fruits next season, unless careful attention is given to the Bordeaux treatment this fall.

I believe that all stone fruits subject to the attacks of Gumosis and peach blight should be thoroughly sprayed now with Bordeaux mixture.

While the foliage is remaining on the trees to a slight extent in some sections, nevertheless, much better results will be obtained by spraying the trees now, than would be possible by any application after the lapse of a few weeks or months, especially with the prospect of more or less rainy weather. Either the commercial Bordeaux paste or the Bordeaux made at home can be used, the commercial product, however, having some advantage for use at this time of the year as it is sold ready for dilution in the spray tank, and also, that it is more adhesive after being diluted and sprayed on the trees.

S. W. FOSTER.

San Francisco.

LIME FROM SUGAR FACTORIES.

To the Editor: Please inform me through the PRESS if the refuse lime from sugar mills has any value for agricultural purposes.—T. C. G., Haywards.

ANSWER BY PROF. JOHN S. BURD.

To the Editor: Answering the letter from T. C. G. of Haywards, requesting information with regard to the refuse lime from the sugar mills, I would say that this material is of variable composition, but will ordinarily contain from 35% to 50% of lime, equivalent to 70% to 80% of lime carbonate. It also has traces of potash and nitrogen and usually a small percentage of phosphoric acid. The value of this material may generally be considered to be limited to its lime content and under circumstances where it is desirable to use lime it can be applied to advantage.

University of California.

The olive crop on the Bonnie Brae Ranch, near Exeter, is said to be fully 30% larger than ever before, notwithstanding the fact that 2,000 less trees are in the orchard than there were in previous years.

The manufacture of grape and fruit syrups is to be conducted at the plant of the Citrus Fruit Products Co. at Lodi.

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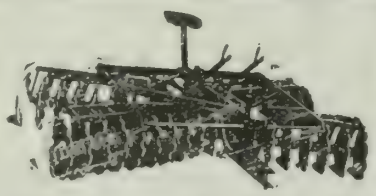

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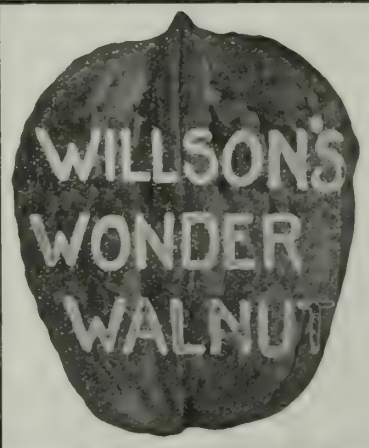

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Sempervirens Cactus Farm

JOHN ZUUR, Prop., Santa Rosa, Cal.
Ask for 1914 Catalogue.

Capacity of Tanks.

To the Editor: I would be much obliged if you would furnish me with instructions on how to measure the capacity of tanks and barrels.—Subscriber, Turlock.

Find the number of cubic inches in the tank or barrel and divide by 231 to get the number of gallons, for there are 231 cubic inches in a gallon. To get the number of cubic inches find the radius in (a radius is half a diameter) and multiply it by itself, then multiply this by 3 1/7 and this again by the number of inches in the height of the tank and divide the result by 231 to give the gallons. If the tank is larger at top than bottom, the average diameter will have to be taken and similar allowance made for the bulge in a barrel. For an example, say that a tank is 8 feet across, and 12 feet high, inside measurement. That means a radius of half of 96 inches (8 feet), or 48 inches, and a height of 144 inches. So 48 × 48 = 2304. This times 3 1/7 gives 7241, which, by the way, is the number of square inches across tank at average width. This figure multiplied by 144, the inches in height of the tank, gives 1,042,704, as the number of cubic inches in the tank, and this divided by 231, the number of cubic inches in a gallon, gives 4513 as the number of gallons capacity of the tank.

DIRECT SEEDING GIVES GOOD RESULTS.

Pine seed sown directly in the spots where the trees are to grow is yielding good results in young trees on the Tahoe National Forest in western California.

This is in marked contrast to the usual results in such cases, because squirrels, mice, and birds will eat the seeds where they are planted without protection, and even when these enemies allow the seed to germinate, the drying out of the soil in drouth periods is usually too much for the tiny seedlings during their season.

Because of these vicissitudes, foresters usually find it advantageous to grow the seedlings in nursery beds, where seeds and plants can be protected by wire screens and shade frames, and where water can be applied when needed. Usually, too, the seedlings are transplanted once or twice before they are set out in their final situation, the transplanting process serving to develop stocky plants with compact sturdy roots. While the nursery bed and transplant process involves more work, it is said to be generally cheaper in proportion to results accomplished, particularly when the cost of seed is taken into consideration.

The California experiment, which indicates the possibility of direct seeding of certain species in some localities, was conducted on an area of 22 acres, sown in the fall of 1910 to Jeffrey pine. A large number of seedlings have become thoroughly established and have made thrifty growth. The plantation is at an altitude of 6000 feet where there is more moisture than at lower elevations.

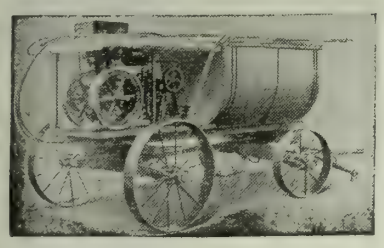
When the seeds were planted they were coated with red lead to discourage mice and other rodents, but so far as the forest officers could find out, the lead coating had no such effect; not enough of the seed was eaten, however, to destroy the value of the planting.

PARCEL POST AND COST OF LIVING.

The value of the parcel post as a preserver of home times was revealed to Postmaster General Burleson in a letter which he recently received from a grateful mother in Ohio, who wrote to thank him for what she called "this blessing." She says that through it she is able "to send packages from the home garden to the children who have gone to the city to make their living. It helps them when living is so high and keeps them in close touch with the home nest."

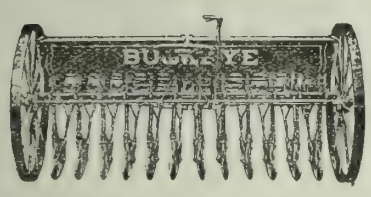
James Edson, of the Knights Landing district, now has over 4,000 hives of bees located all the way from Nevada to the San Joaquin valley.

HARDIE SPRAYERS



Get a Hardie and be satisfied—the best sprayer made.
Complete line of hand and power sprayers and accessories.
POINDEXTER & SNITJER,
State Agent,
320 Market St., San Francisco.

THE "BUCKEYE"



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Do not forget our
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20 discs, 4 inches apart.
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WHOLESALE DISTRIBUTORS.

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The only fertilizer made that is free of fats and oils, and is odorless.
25% cheaper.
Send for pamphlet and analysis.
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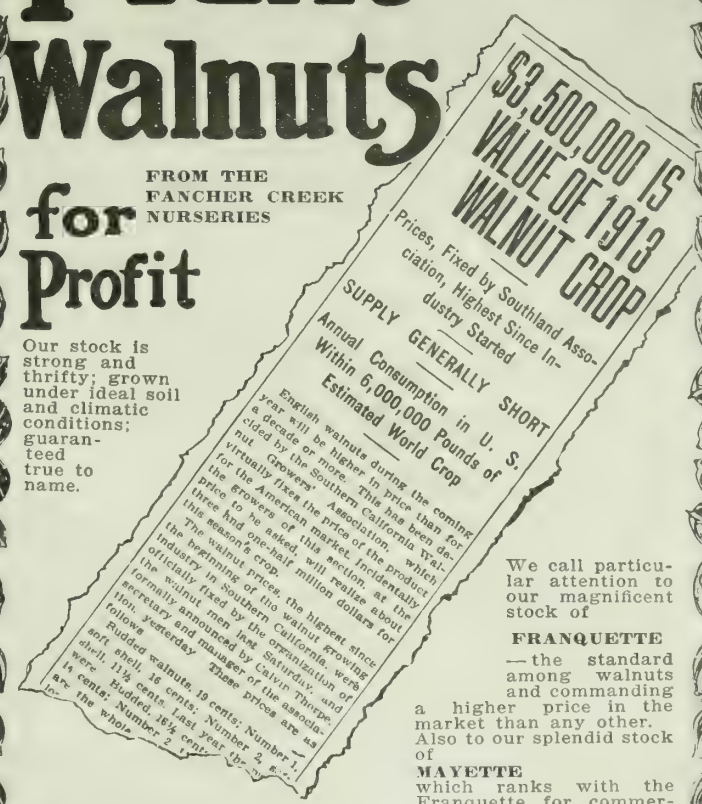
Evans Ave. and Keith St., San Francisco.

Plant Walnuts for Profit

FROM THE FANCHER CREEK NURSERIES

Read this clipping from the Los Angeles Examiner of Oct. 7, 1913.


$3,500,000 IS VALUE OF 1913 WALNUT CROP
Prices, Fixed by Southland Association, Highest Since Industry Started
SUPPLY GENERALLY SHORT
Annual Consumption in U. S. Within 6,000,000 Pounds of Estimated World Crop
English walnuts during the coming year will be higher in price than for a decade or more. This has been decided by the Southern California Walnut Growers' Association, which virtually fixes the price of the product for the American market. Incidentally, for the growers of this section, at the price to be asked will realize about three and one-half million dollars for this season's crop.
The walnut prices, the highest since the beginning of the walnut growing industry in Southern California, were officially fixed by the organization of the walnut men last Saturday, and formally announced by Calvin Thorpe, secretary and manager of the association, yesterday. These prices are as follows: Budded walnuts, 19 cents; Number 1, soft shell, 18 cents; Number 2, soft shell, 11½ cents. Last year the prices were: Budded, 16½ cents; Number 1, 14 cents; Number 2, [illegible] are the whole-

Our stock is strong and thrifty; grown under ideal soil and climatic conditions; guaranteed true to name.

We call particular attention to our magnificent stock of
FRANQUETTE
—the standard among walnuts and commanding a higher price in the market than any other.
Also to our splendid stock of
MAYETTE
which ranks with the Franquette for commercial worth and is a prolific bearer.
We can also supply the following well known varieties: Concord, Eureka, Placentia Perfection, Parisienne, Chabert, Cut-leaved, Mayette Rougue and Neff's Prolific.
Write for Quotations.
We grow everything that grows: Citrus and deciduous fruits, nuts, berries, ornamental trees, shrubs, palms, evergreens, roses, etc.
FANCHER CREEK NURSERIES, Inc.
Geo. C. ROEDING, Pres. and Mgr. Paid up Capital $200,000.
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NATURE'S CROP PRODUCER
Hydrated and Ground Carbonate of LIME Send for Free Booklet
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"Action of LIME on SOIL—Neutralizes acidity, releases potash, aids in forming humus, aids bacterial activity, aids growth of legumes, flocculates clay soils, makes sturdy trees, increases fruiting, hastens maturity of fruit, makes fruit sweeter, makes soil phosphates available."
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MOCOCO SUPERPHOSPHATE Fertilizer
Now is an excellent time to apply this rich Phosphorus fertilizer to your
FRUIT TREES
The winter rains will cause the phosphoric acid to be thoroughly distributed throughout the soil, and this means that the available plant food will help the fruiting next year wonderfully.
THE MOUNTAIN COPPER COMPANY, Ltd.,
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TREES—UNIRRIGATED TREES
Hardy, clean, pure, reliable French Prune, Bartlett Pear, Peaches, Apples, Cherry, Almond and Grafted Walnuts on Calif. Black.
Write or wire us your wants. Special prices for large orders.
TABLE GROVE NURSERIES
A. J. GALLAWAY, R. F. D. No. 2, Healdsburg, Cal.

The Potato Tuber-Worm.

Literature on the potato worm has been scant since Prof. Clark's excellent bulletin published by the California Experiment Station went out of print some years ago, and yet the pest has been driving its tunnels through the spuds whenever the neglect of owners gave it a chance. Recently the pest has become a national concern. In our issue of September 27 last we gave an interesting account by Mr. Yothers of the Washington State Experiment Station. Now we have a popular account by the U. S. Department of Agriculture prepared by Dr. F. H. Chittenden, largely based upon observation in California. It is, in large part, as follows:

INTRODUCTORY.—For many years the potato tuber moth, known scientifically as *Phthorimaea operculella* Zell., has been the worst potato pest in California. It has now reached the state of Washington and southern Texas and menaces adjacent states. This insect feeds also upon tomato, eggplant, and tobacco, which do not, however, as a rule, suffer much injury. When it occurs on tobacco it is known as the splitworm.

The mature moth of this species is quite small and grayish in color. The eggs may be laid upon the leaves or on other parts of the plants, and the minute caterpillars or worms quickly bore between the surfaces of the leaves or into the potato skin, which they mine in every direction, finally devouring the exterior. It is believed that there are two or more generations in the course of a summer, and certainly another one can be produced in store. It thus happens that this insect belongs to both truck-crop and stored-product insect pests.

EVIDENCE OF IMPORTANCE.—As evidence of the importance of the pest Mr. J. E. Graf, working under the direction of the writer, wrote:

"In September, 1912, an unusual outbreak occurred at El Monte, Cal., due entirely to a combination of circumstances. Thousands of acres of potatoes were planted in southern California—many more than the market would stand. This meant that the market was continually clogged and prices were poor, so that the crop was worked off very slowly. The tuber moth (*Phthorimaea operculella*) is always found here, but the crop is generally handled so quickly and carefully that small loss results. This year, however, careless work and the leaving of potatoes in the ground too long have given the insect a tremendous start, and now its ravages are greater than ever before. A combination of the moth and low prices has so discouraged many of the growers that they are leaving their potatoes to rot, and as these are becoming infested there will be a great number of moths waiting for the fall potatoes.* * *"

Later, September 17, 1912, Mr. Graf wrote in regard to injury by this species that two growers near El Monte, Cal., lost $90,000 and $70,000, respectively, on potatoes that year. Items of this kind show the necessity of investigating the problem.

REMEDIES.

The potato-tuber moth is a difficult insect to control by any single method. It is not possible to reach the tuber worms in their mines in the potatoes or in the stalks or tubers while growing in the field, which makes it necessary to proceed against the pest by other methods. Of these, several must be employed to insure success.

CLEAN METHODS OF CULTIVATION.—The first measure consists in the maintenance of clean methods of cultivation. This implies that all infested potato plants and solanaceous weeds, such as ground cherry, bull nettles, horse nettles, and volunteer potato plants, growing in the same vicinity as the potatoes, must be destroyed. This can be done by prompt burning as soon as insect infestation is manifest. The burning of these weeds will eliminate places for the breeding of the insect or for its successful hibernation. Domestic animals, such as sheep and hogs, are valuable for the destruction of remnants and may be utilized by merely turning them into the field.

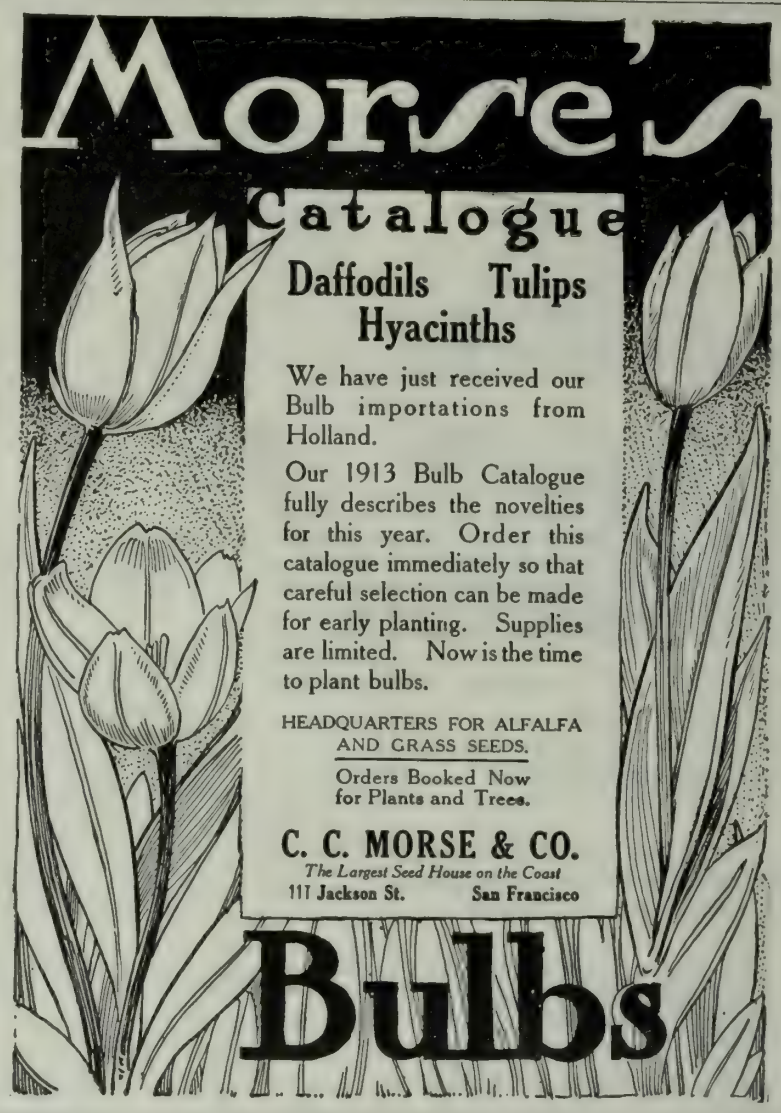
CROP ROTATION.—As in most other cases of insect injury, crop rotation is desirable where possible, and the cooperation of all potato growers of the neighborhood is practically a necessity. In certain cases, as, for example, in a county where many potatoes are grown, it might be possible by legislation to enforce the discontinuance of potato planting for a year, requiring at the same time the destruction of the weeds which serve as food plants. There are several alternate food crops which do not suffer materially from this insect. About the best of these are leguminous crops, like beans, peas, cowpeas, alfalfa, and clover. These possess a dual value, as they all act as soil restorers. Sugar beets, celery, and crucifers are also good as alternate food crops. Grains may serve in the same way, as they are not attacked by the tuber moth.

Care in digging is advisable in order not to cut into the tuber or leave the dug potatoes in the field over night where reinfestation could occur.

FUMIGATION.—While all of these remedies are of value, the best remedy is the fumigation of infested tubers with bisulfid of carbon or hydrocyanic-acid gas. If bisulfid of carbon is used, it should be at the rate of 3 pounds to 1000 cubic feet of air space, including the potatoes; 1 ounce to a barrel of 96 pounds' capacity would not be excessive. With an exposure of not more than 24 hours no harm should be done to the potatoes for planting. The bisulphid should be evaporated in tins, like pie plates or pie pans, and a cover should be placed on the top of the fumigating barrel or box so as to make it as nearly air-tight as possible. At the end of 24 hours the potatoes should be removed, placed in a fresh barrel, and closed up.

Where it can be conveniently done, hydrocyanic-acid gas should be used in a specially constructed fumigator, also gas-tight. In the case of bisulphid of carbon there is great danger in bringing the chemical into promixity to fire, such as a lighted lantern or cigar, for the gas is highly inflammable and even explosive. Then, too, the bisulphid of carbon method costs slightly more than the hydrocyanic-acid gas method.

Fumigation with hydrocyanic-acid gas, properly performed, is not dangerous, but if improperly performed it is decidedly dangerous to human and other animal life,



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FANCY ALFALFA SEED
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as the fumes are very poisonous and are deadly when inhaled in any amount. The cubic contents of the receptacle to be fumigated, on which is based the amount of chemicals to be used, can be readily computed.

The fumigating box, which will presently be described, may merely be taken as an example of what can be easily constructed to meet the purpose. In the case of this box the potatoes are best fumigated in bags, which can be piled one on top of another. If bins or other fumigators are used, the proportions will vary. They can be constructed longer or shorter and lower, according to the individual needs and desires of the potato grower.

THE CONSTRUCTION OF A FUMIGATOR.—A building, box, or room of about 100 to 200 bushels capacity suitable for the fumigation of a quantity of potatoes would contain about 500 cubic feet. A fumigator of this cubic capacity might be built 8 feet square by 8 feet in height. A good, and perhaps the best, means of preventing the escape of the gas is to line the fumigator with sheet tin, with soldered joints, and over sheathing. Another method is to sheath the room inside, cover the walls, ceiling, and floor with tarred or heavy building paper, with joints well lapped, and cover the inside with matched ceiling boards. The fumigator should always be equipped with a tight door in which the joints have been broken, similar to the door of a refrigerator safe, and should render it practically gas-tight. Thus constructed it would furnish sufficient space for the fumigation of about 200 bushels of material. There would also be sufficient space for the application and diffusion of the carbon bisulphid, hydrocyanic-acid gas or other fumigant from the top with a charge more than necessary for the quantity of potatoes treated.

It sometimes happens that the price of potatoes is so low that the small grower can not well afford to expend the amount of money which would be necessary for the construction of a special fumigator. In such a case it would be advisable to use a barrel, preferably a large oil barrel, with a tight fitting cover, for fumigating. It is possible also to fumigate, but not thoroughly, piles of tubers by covering them as tightly as possible with canvas, such as 10-ounce duck or tarpaulin.

PROTECTION OF THE FALL CROP AND SEED POTATOES.—For the protection of potatoes in fall against this pest it is urged that potato growers sort the potatoes for seed two weeks after digging and again two weeks later. The uninfested tubers should then be placed in a moth-proof bin. The infested tubers may be readily picked out because of the excrement of the larvæ which adheres by webbing to the outer skin of the potatoes. The tubers in the moth-proof bin, after final sorting, should be fumigated with carbon bisulphid (bisulphid of carbon) to destroy any moths which might have bred out or have obtained entrance through other means. Growers should now keep a careful lookout both in the field and among the fumigated tubers. At first those which have been fumigated should be inspected daily. Aterwards observations may be made every other day until finally once a week will suffice. If there should be any indication that the tuber moth is propagating, a second fumigation is in order.

This method of saving seed potatoes appears so simple, although effective, that it is feared many growers may disregard it.

To grow all potatoes successfully the farmer should work overtime on a cleaning-up campaign. Small or useless tubers and tops should be promptly cleaned up and burned, and the land should be harrowed to break up clods and leave as few hiding places as possible for the mothers. All weeds and other plants of the potato kind should be destroyed over large areas surrounding the potato fields.

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Rex Lime and Sulphur Solution
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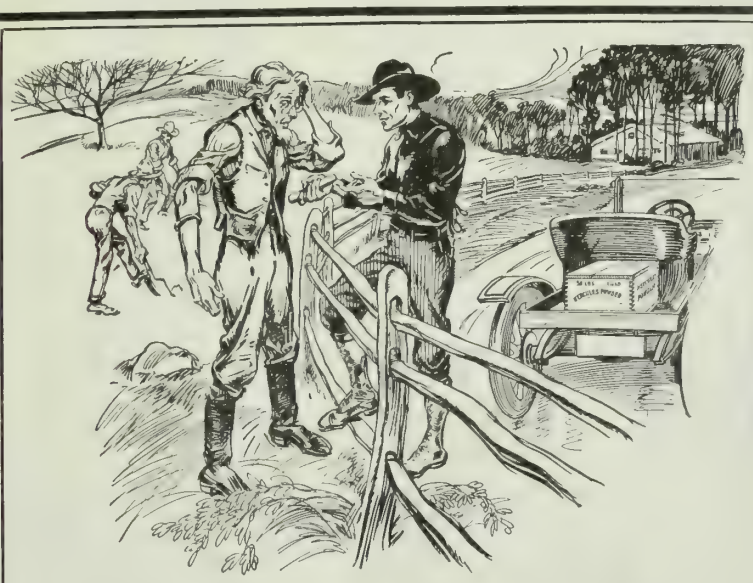

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saved me time, labor and money.

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Write for a copy of "Progressive Cultivation," and learn how to practice it. Mention the name of your local dealer.

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AGRICULTURAL REVIEW.

With the Fruit Men.

Data are being secured in the Porterville district by E. M. Chase, chemist of the pure food bureau of the Agricultural Department, in an effort to set a Government standard regarding the proper ripeness of shipping oranges.

It is now estimated that fully 4,500 cars of oranges will be shipped from the Porterville packing-houses this year. The packing season was started last week and growers have been notified that for the first two weeks the pack will be made strictly according to color.

The first shipments of oranges were expected to leave Oroville last Monday for the East. The last week's rain delayed the shipping season somewhat, but it is thought that about 20 cars a day will be shipped from now until the middle of December. The fruit this year is of exceptionally good quality, but will fall short of last year's total quantity.

The Tulare County Citrus Fair, to be held at Visalia December 4 to 13, is assuming enormous size and will include all kinds of agricultural exhibits. The premium list shows that $1,500 will be awarded, the aim being to bring out high quality exhibits.

In the report of H. H. Bowman, County Horticultural Commissioner of Placer county, he estimates that there were 37,000 tons of fruit shipped from that county to Eastern points this year. This amount represents about 67% of a normal crop.

The first car of oranges was shipped from Placer county last week by the Whitney Estate Co. The fruit in that district this year is said to be of extra good quality, and it is thought that the yield will be 25% more than that of last year.

Date picking will be commenced at Heber, Imperial county, this month. It is said that the mature trees will produce from 250 to 300 pounds per tree.

It is estimated that there will be a million orchard heaters shipped to southern California this year. There have been 20,000 already received, according to advices from that section.

The Terra Bella Fruit Growers' Association has shipped 9 carloads of casaba melons to Eastern markets so far this year, and several carloads are yet to be shipped. Indications are that growers will be well repaid for their crop this year.

The pack of the Winters cannery this year amounted to 750,000 cans, 300,000 of which were shipped and the balance is being held awaiting labeling and shipping orders.

Oroville has five olive packing companies bidding for fruit. It is said that one organization has the secret of putting up a high-class product of ripe Queen or Sevillano olives.

The high price for Arabian dates which is being received this year is expected to give additional courage to growers of Riverside county who have already made a good deal of showing in that way.

Horticultural Commissioner Morris reports the fruit crop in the Santa Clara valley for the season just closed was very good considering the frost and dry year. Very little trouble was experienced from thrips or other insects. The prune crop amounted to about 50,000,000 lbs., most of which was sold at 4½c. The apricot crop was light, but prices were good. Peaches were also short, and growers are not getting what they should for the dried product. Apples were a good crop, and prices were unusually high. Many irrigating plants were installed, and as a rule the orchards of the valley are in good shape to produce a fair crop next season.

Grape Notes.

C. W. Mann, of the U. S. Department of Agriculture, has been endeavoring to get Thompson Seedless growers to market more fruit through the use of redwood sawdust, as those who have shipped in that way from the San Joaquin valley report that the grapes have arrived in good condition.

The Associated Raisin Co., of Fresno, has recently discovered that outside packers are selling inferior raisins as fancy seeded and are also sending out cartons which weigh less than one pound, as represented. Steps will be taken to stop such misrepresentation.

The Sierra Vista Vineyard Co., which has been shipping wine grapes from the Turlock district, has finished for this season. It has shipped about 2,700 tons this year, with prices averaging $12 per ton.

It is thought that there were 52,000 tons of wine grapes raised in San Joaquin county this year. The value is placed at about $520,000, or $10 per ton. This was much better than the growers had hoped for earlier in the season, and is about 20,000 tons less than a normal crop.

The wine-making season closed, in Fresno county, last week. Manager Frank Malcolm, of the Calwa plant, states that

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FOR CASH
PHOSPHATE FERTILIZE AND LIME
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Fast Electric Trains Between San Francisco, Oakland and Sacramento
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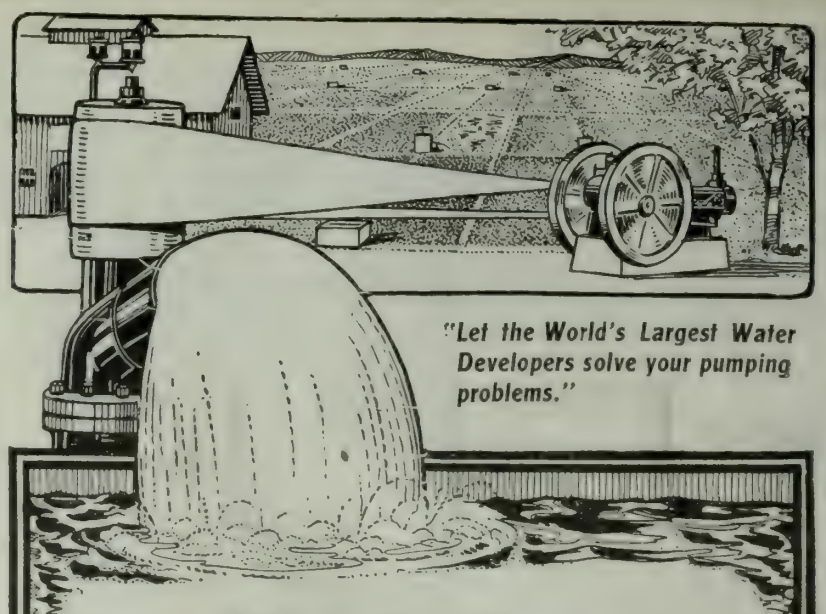
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the wine output will be 30% short of a normal season and that the wine movement is slow.

The returns from late shipments of Tokays from the Lodi district are still running from $1,100 to $1,400 per car, with an occasional car lower than the first figure.

An order was issued last week that hereafter when outsiders wish raisins they must deal directly with the Associated Raisin Co. and will not be able to purchase from packers affiliated with the Association, as has been the case in the past.

A temporary organization of grape growers was formed at Healdsburg last week. At the meeting there were fully 4,500 tons of next year's crop signed up.

A 26-acre irrigated vineyard, in the Lodi district, owned by H. Perrin, produced 245 tons of grapes this year which were sold for $10 per ton.

Field Crops.

Eighteen hundred acres of the Shippee ranch, near Biggs, has been sown to wheat and oats on summer-fallowed land.

It is estimated that 1,000 acres of sugar beets will be planted this year by farmers around Riverdale and Hardwick, Kings county. The San Joaquin Valley Sugar Co., of Visalia, has the crop contracted for.

It has been anounced that the Sperry flour mill at Marysville has been leased and will be remodeled into a rice mill.

The grain crop of the Tulare lake section has practically all been harvested with the exception of the "gyp" corn, which will take about two weeks longer. The yield of grain this year is said to be in the neighborhood of a million sacks.

A display of cotton is being made at Lodi by J. E. Bittner, who thinks that it would be possible to grow that crop in his section successfully.

J. W. Young, of Kings county, states that he has found that rhubarb can be successfully grown in that section providing the proper methods are used.

It is thought that some earlier maturing variety of rice will be needed for successful rice culture in this State, by those who have been investigating the rice fields since the heavy rains. While the damage is not extensive this year, it is thought that in a season of early rainfall the loss would be considerable, and for that reason an endeavor will be made to find a new variety.

The best price paid for hops last week was 23½c, received by the Grace Bros. of Santa Rosa. Other sales were made at 22½c, and it is thought that there is small chance of any improvement in the present prices.

Fifty acres of the Van Syckle island, near Suisun, will be planted to cabbage for the early summer market.

The rice crop has all been harvested in the Biggs and Gridley district, having been completed a few days after the last rain.

About 1,000 acres have been planted to celery in the delta region this year. Shipments have already started and will continue until late in January or early in February.

From 240 acres of land in the Klamath Falls district, planted to potatoes by Japanese, $125 per acre was realized. The rows were two feet apart and hills were eighteen inches in the rows.

Miscellaneous.

J. H. Knight, of Biggs, Butte county, has purchased about 1,100 acres of the Broyles estate near Nelson, for a consideration of $66,000.

A company known as the Porter Placer Company is said to be quietly buying up land below Nevada City for the purpose of storing water for irrigation to be used in the Penn and Pleasant valleys.

Several Humboldt county farmers are said to be looking for land in the Willows section.

At a meeting of Merced citizens last week it was decided to have the city included in the new county irrigation district.

The Chamber of Commerce of Klamath Falls, Oregon, has asked the county court to levy a tax to raise funds for a county adviser.

A committee from Yuba county will appear before the State Reclamation Board soon in regard to the completion of the Plumas canal.

The poultry show to be held at Modesto November 12 to 15, is expected to be one of the best ever held in that place, as the entries have been coming in rapidly and are of better quality than heretofore.

The Jensen ranch, near Livingston, will be improved by the owner, H. F. Milliken, who plans on planting 600 acres to alfalfa this fall.

C. G. Hinds, secretary of the Alameda County Poultry Association, announces that the tenth annual exhibition will be held in Piedmont Pavilion, November 25 to 30. Entries for the show will close November 15.

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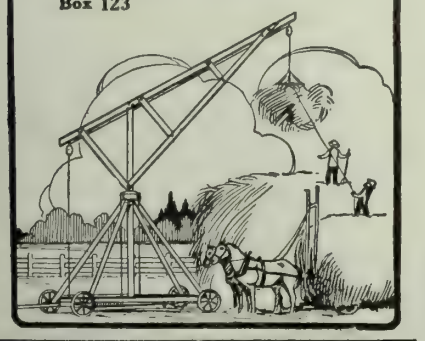

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Live Stock to Rebuild a Wornout Soil.

[By the Associate Editor.]

Most everybody that pays attention to what is going on has learned the last year or so that Jack London is getting in line to be one of California's leading farmers. At least they have guessed from items appearing in the agricultural press and elsewhere that he was farming a good deal of land, just as many other men prominent in other lines than agriculture have great farm properties and give a great deal of attention to their management. The point in this case is essentially one of the regeneration of exhausted soil, possibly the most fundamental problem facing America today. The methods applied can fit the man with 40 acres as well as the man with 4000.

His ranch is on one of the first farmed districts in California and one of the best in several respects. The soil today is practically dead and worthless; it has given its best and has been robbed to the limit of its fertility, and for years it has given no profits to its owners, but only an expense to them.

The ranch itself consists of 1500 acres on the hillsides above Glen Ellen, at the head of Sonoma valley and 15 miles or so east of Santa Rosa. The hills rise westward 2000 odd feet above the floor of the valley, the ranch extending from the crest down to Sonoma creek itself. The valley below was farmed in the old Mexican days and the first vineyards on the hill slopes of northern California went in during the early fifties. They demonstrated the fitness of coast valley hillsides for the vine, and of the 1500 acres, possibly 600 was in wine grapes. That is about all the tillable land on the ranch.

But, although it was vines and not grain that was raised, the destructive methods were the same. Everything that could be taken off was taken off and nothing was returned to the soil. Neither was any effort made to handle the soil to develop best its possibilities, and little by little the productivity diminished. Before long profits were reduced to nearly the vanishing point and the soil was leased to tenants who took still more from it, neglecting it a little bit more, and left it in little worse shape. There were five ranches in the 1500 acres and there was an average of three financial failures from poor farming per ranch. That left a challenge, 15 failures from some of the finest land in California. Was the land to lie idle and valueless forever, or was it to be brought back with profit to fertility?

The plan of regeneration was mostly a matter of growth. Nine years ago, London purchased about 130 acres for a country home on account of the beauty of situation and climate. Then he bought some more adjoining land to keep the timber from being cut from it, until two or three years ago he had the present acreage and had to face the prospect of doing something with it.

The ranch is all hillside, but a good percentage is level enough to make plowing and cultivation reasonably easy. Redwoods in some places are plentiful, though the first growth has long since been removed. Elsewhere oaks, madrone, manzanito and other hardwood trees or bushes covered the ground, until removed for vines. Nowhere are there signs of bedrock, though the soil is liberally supplied with floating rocks of various sizes, from the size of a doorknob up, some places more abundantly than others.

In a few of the richer spots the vines, three years ago, were still productive. In others they would nearly pay for the care given, and in others they were only a useless and troublesome luxury. London first investigated to find out what were not worth keeping and pulled up about two-thirds of the vineyard acreage as a result. Most of the rest was worth keeping for the time being. The only thing that looked safe to him after the vines were out was eucalyptus, of which there are now over 100,000 growing. They have almost everywhere made a good stand, are growing finely and should prove profitable.

Eucalyptus planting, however, is not an essential part of the plan of regeneration. The idea is to develop a stock farm with horses, beef and dairy cattle, goats and hogs, as stock fit in with the best methods of soil conservation and improvement. They will also more than pay their way.

There is no doubt about stock prices, for meat will always he high while prices for other crops may be low. Furthermore, the land can be tilled intensively and yet practically everything taken from it put back again in the best form for soil improvement, the only plant foods being lost being those going to build up the animal tissue. In all ways stock appears best to bring back the land to its first vigor. Not that stock raising naturally is the industry for the location or the location fits in well with stock, but as a method of bringing back fertility, stock seemed essential, and all stock will be the best stock. London planned the policy of the ranch and has the ultimate decision on all important points, but has not the time to attend to the detailed management, which is under his sister, Mrs. Shepherd.

Good Selection.—At the head of the stock stands the Shire stallion, Neuadd Hillside, grand champion at the State Fair when shown in 1912 and one of the finest draft stallions of any breed in the country today. There are also a couple of purebred mares, kept for work and breeding purposes. Even the stallion is worked, and although five years old before he ever was in the harness, he took to it right away and bends proudly to his task, glad to get something worthy of his strength. Not only in form is he a wonderful animal, but in action and courage. Horses have to be kept for farm work, and better have good ones and better raise colts while one is about it.

The dairy is another purebred branch of the farm, more in prospect than in being. That is, the stock is already on hand, but is all very young. London thought it better to get young stock of good breeding and raise them on the place than to buy milking cows. There is both a young Jersey bull and a bunch of registered heifers as the nucleus for the coming herd.

Beef cattle will also be kept, and the beginning of a purebred Short-horn herd has been made. Other Short-horn stock will be added as the farm is ready to look after it. The dairy cattle will be fed from alfalfa, corn and corn silage, root crops and other fodder raised especially for them. There will also, however, be pastures too rough or too remote from headquarters to use for dairy cattle, and that is where the beef stock will come in. Cleared spaces on the top of the hills and elsewhere will be used for hay and other crops, always in rotation and with regard for soil benefit, and the beef cattle will be fed there so that all manure will be returned to the soil that the feed came from. This will be as good for the soil as keeping it in sod, and much more productive. Much of the ranch will have to be pasture, and some, including the eucalyptus, in timber only.

Hogs always find a place on a ranch, especially where there are cows. Some I. O. C.'s were the first purebred stock purchased, in fact. The boar has developed into an excellent breeding animal and would stand high if shown, and the sows have developed well also. There has not been time to develop a large herd of swine, but the increase has been rapid, the Percentage of pigs raised has been high and the quality exceptionally good, both for breeding and market purposes. Young animals are given a range and get acorns and other natural foods that are inexpensive and profitable. They are also fed every day from the barn, even when on range. A start has also been made with Durocs and Berkshires and the breed or breeds will be kept that prove most suited to conditions. For cheap and profitable hog raising, the ranch is very well fitted.

Not the least important animals are the goats, which cost almost nothing to keep, improve the land that feeds them and give good cash returns also. A bunch of grade Angoras were purchased this spring. They have made rapid progress in clearing underbrush and giving the grass a chance to grow. It is just the kind of life that they enjoy and there remain few leaves of any kind they can eat within reach in their range. They are fenced in and so cannot become lost, but never have given trouble nor gotten into difficulty. Purebred bucks are kept and two or three purebred does have also been purchased recently, and here, as with horses, milch cows, beef cattle and hogs, good breeding is an essential.

The plan for the place is this: The vineyard will all come out and except for a family orchard, every bit of land worth cultivating, except that planted to eucalyptus, will be put to raising crops for stock, the manure all going back to it. The fields cleared on hilltops and places where it will be inconvenient to haul from will be planted and the beef cattle fed there. The underbrush on every other piece of land not kept for timber, too steep or too poor for cultivation, will be partly cleared by goats and used for pasture. Rotation is to be practiced everywhere.

Wretched Conditions.—This whole plan was adopted on account of the wretched condition the land had been brought into. The soil had washed woefully, partly through sheer neglect and carelessness, partly through lack of humus. Vines had died out in spots and even grass had often almost ceased to grow and the soil itself seemed dead. Although the ranch slopes upward fairly rapidly, there were numbers of benches where the drainage was so poor that large areas of level, rich, deep soil were waterlogged and useless. The plan is to put back humus and prevent the destruction of humus, to drain the land where necessary, to store water and to do whatever else is required.

Two things showed that the soil, although apparently infertile, was naturally rich. One was the fact that in the woods a few feet from tilled land and where conditions were once practically identical, with a shade in favor of the part cleared, the soil was of virgin richness. Therefore the tilled soil was once equally rich, too, and the difference was mostly through long cultivation and through the removal of decades of crops.

The second point was shown by corn growing. Corn was planted where a vineyard had been, and tillage continued every year. Other corn was planted on an adjoining piece where an orchard had been abandoned and a sod was given a chance to form. The corn on the sod was fine, on the other worthless, so a renewal of humus was proved necessary. Even Canada peas, vetch and burr clover was a failure on long-tilled ground, and rye is to be planted with the first rains this year to give things a start. It is intended to have legumes in the rotation on every piece.

There is also work in drainage, and big pieces of the best land, neglected by being waterlogged, have been and are being reclaimed by tile drainage. The concrete tiles are made on the place with forms regularly used for underground irrigation pipe. The most productive piece on the whole ranch was once a waterlogged area of sticky adobe most of the year and like a rock the rest of the time. Now it is a loam, productive all the year long, simply through till drainage.

Water also is being saved. The upper part of the ranch is a regular sponge and has many springs, but the water has gone to waste or spoiled good land. One dam which will store about 5,000,000 gallons is being built and other dams will be built later, giving water that will double cropping. Alfalfa can thus be grown on the deep, rich, drained land, which will be planted this fall according to the Eastern method, with a good dressing of lime, needed to correct acidity. Beets and carrots are also grown for the stock, and a concrete block silo is standing, partly filled with corn silage. More silos will be erected later.

Partly to permit irrigation and partly to prevent washing, some land is being contour plowed, the first on record on the ranch. Previously straight plowing only was done, and many furrows became small rivers when heavy rains came.

Other features, including the fact that a great saving in time and money is made through having a blacksmith shop and a blacksmith on the place; a rock-crusher, cement-mixer, and so one, need not be mentioned. It is an interesting fact that a man like Jack London will give his main attention after business to farming, but the most interesting point of all is the effort to take land, once one of the most promising pieces in California and gone to rack and ruin and to make it once more productive and enduring. Cover crops, rotation, drainage, irrigation, live stock are the right lines to obtain this end, and the success that appears on the horizon will be a turning back of the wheels of time to give again an opportunity to build up a generous and productive soil.

County Live Stock Exhibits in 1915.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The first step taken toward a county live stock exhibit, to be shown at the Panama-Pacific Exposition in 1915, was launched at a joint meeting of the Stanislaus Exposition Commissioners and the Advertising Committee of the Modesto Board of Trade a short time ago.

Some time back an article appeared in this journal relative to the need of an organized effort along this line by live stock men, and since that time the writer has talked with many of the more prominent breeders, all of whom seemed to be unanimously in favor of some such step. It is to be hoped that the stockmen of Stanislaus county will work out some method by which the county's live stock resources will be shown to the thousands of prospective settlers who will visit the State that year, as well as its fruit resources, for undoubtedly live stock is the leading industry in that county at the present time.

That the need is evident for county stock exhibits, as well as county fruit exhibits, was demonstrated in a smaller way at the Land Show held in San Francisco during October.

This, like the Exposition to be held in 1915, was held primarily for colonization purposes and to show prospective farmers what the different counties could produce in the way of farm crops.

Unquestionably, the show was a grand success, from an attendance standpoint, and everyone who attended was well pleased with the showing that their respective counties had exhibited and for which the different counties stood all expenses.

From a fruit growing standpoint it is doubtful if there has ever been a show held in the State which created such a desire in the city man's heart to get back to the farm, but, as one stock man remarked, "the Eastern man who came to this show directly from the train would never think that some of these counties that are showing such fine fruit exhibits were almost entirely dependent upon some form of live stock raising for their land values, especially if he traveled through either of the interior valleys in the night."

This man's views might be taken as a criticism of the show from a prejudiced viewpoint, as he was only interested in the live stock end of farming, but his point was well taken, as there was nothing there that indicated the vast live stock resources which this State has that are ready for development.

So far as we can see, there is no reason why a good live stock exhibit could not be added, as there is ground room for such purpose, and if the show is a good place for the counties to display fruit products, an exhibit of purebred stock would, we believe, make it much more instructive to visitors, as well as more profitable to the exhibitors.

The question is not whether the show was a success, but whether it can not be made more so, and while it is just and proper that each county should display fruit products, it seems unjust that the live stock should be so neglected.

As we pointed out in a former article, a repetition of this experience will occur in 1915, if some organized effort is not taken at once, for all of the present county appropriations are to be used in buying floor space in the State buildings where only fruit and agricultural crops can be exhibited.

We infer that the movement started at Modesto is for the purpose of having a representative showing of purebred stock at the Exposition, which will be maintained either as a whole or in part by the taxpayers of the county, in the same manner as the other farm products are displayed, and any plan which may be satisfactorily worked out to accomplish that end will doubtless be used as a foundation for other counties equally interested, upon which to base similar undertakings.

REGULATION OF SEPARATOR SPEED.

To the Editor:—In your article in the RURAL PRESS of October 11th on "Losses From Wrong Speeds of Separators," you refer to the need of a cream separator speed indicator. For some years while using a hand separator I maintained the proper speed by means of a pendulum made by suspending a burr by a string. Use a pendulum 18 inches long for a speed of 44 revolutions per minute and one 14 inches long for a speed of 50 revolutions. Intermediate speeds may readily be obtained by trial with intermediate lengths of the pendulum. I hung the pendulum above the separator and when I thought the speed correct I swung the pendulum forward with the forward motion of the handle, and if the speed was correct, the pendulum would swing forward and backward for some time in unison with the motion of the hand in turning the separator. Later I purchased a metronome of Montgomery Ward for $2.95 that by adjusting the vibrator would beat the proper time and ring a bell every fourth beat or every second turn of the separator handle if the speed was maintained correctly. M. E. TAYLOR.

Ceres.

WILL HORSE BREEDERS ORGANIZE?

[Written for the PACIFIC RURAL PRESS.]

In our issue, of October 25, we published a letter signed "fair play" urging draft horse breeders to take some decided stand against the practice of allowing unsound horses to carry off premiums, at the State Fairs, and suggested that a horse breeders association should be formed with that, as one of their objects.

"Fair Play," attributed the blame to the judge, claiming that anyone who is competent to act in that capacity, could easily detect the deficiencies in the animal.

Opinions seem to differ as to who is to blame, but everyone seems to be agreed that the condition is a bad one, not only for the welfare of the Fair, but for the good of the draft horse business, as may be seen from the letter published in last week's issue of this paper, written by Henry Wheatley, of Napa.

Undoubtedly the horse breeding and selling situation in this State, is in bad shape when such horses as he mentioned are even allowed stallion licenses, as a glance at the California Stallion Registration Law, Chapter 677, Sec. 3, shows that in order to obtain the license certificate the owner of the stallion must forward an affadavit to the Stallion Registration Board, signed by a licensed veterinarian, to the effect that he has personally examined such stallion, or jack, and that, to the best of his knowledge and belief, the animal is free from hereditary, infectious, contagious, or transmissible diseases or unsoundness.

In section 4, these diseases are classified and include the following named diseases, Laryngeal hemiplegia, (roaring or whistling); pulmonary emphysema, (heaves, broken wind); chorea, (St. Vitus' dance, crampiness, shivering, stringhalt); bone spavin; ring bone; side bone; navicular disease; osteoporosis; curb, when accompanied with faulty conformation of hock; glanders, farcy; maladie du coit; urethral gleet; mange or any contagious or infectious disease.

As Mr. Wheatley, pointed out, horse breeders or buyers should not expect a judge from some Eastern State, to come here and carefully examine each animal as to soundness, which would entail a great deal of his time. As a matter of fact he naturally supposes that they are sound inasmuch as they are not supposed to have State licenses otherwise.

If such practices only affected the receiving of the so called gold (but in reality bronze) metals, the damage, to the State, would not be so serious, but when it is remembered that all of these animals are used to breed grade and purebred mares with, the question becomes of interest to every farmer who pays a stud fee during the breeding season.

The cry so often heard that there is no money in raising good draft horses on account of the auto truck, seems to have a bearing on this subject also, for as a large city transfer said, "I have to scour this State from top to bottom every year in order to get good sound heavy horses, simply because the majority of farm mares are bred to stallions that should never have been allowed in the State. Even with all this expense, I find that I can go East and get a better bunch of stuff for less money." He further stated that the horse market would take care of itself if the farmer would only raise the kind of stuff that the city market demanded.

An organization as suggested previously, could handle the above measures as well as all others which pertain to bettering the horse breeding game and until some organized effort is made no immediate relief can be expected.

We understand that any such association would be heartily supported by many of the San Francisco firms who buy yearly, large numbers of geldings, as they are anxious for the supply to become great enough to enable them to buy at home.

With the horse breeders, importers, and buyers, all in one association it seems certain that a great deal of good could be accomplished and we hope that those interested, will feel free to express their opinions in these columns relative to organization plans.—J. C. L.

HOGS FROM WASTE MELONS.

[Written for the PACIFIC RURAL PRESS.]

Experience has shown that there are many of the farm wastes that can be profitably turned into actual cash by feeding to hogs, and in this respect many of the districts where melons are grown extensively depend almost entirely upon the hog to clean up the patches after the melons become unfit for marketing, or as is the case some years when prices are poor, they are brought into use much earlier in the season.

The Turlock district of Stanislaus county, which has long been noted for its large crops of cantaloupes and watermelons makes better use of the hog in this respect than most other districts on account of the large amount of such feed which is usually available in the fall of the year after the shipping season has ended.

Linquist Brothers of Turlock, who have had experience in feeding melons to purebred Durocs, state that cantaloupes make an excellent feed, and if given all they will eat, hogs will fatten very fast on them and make a fine quality of pork.

Watermelons are also considered a good growing and fairly good fattening feed, but will not turn out a good grade of pork unless fed some grain in connection.

Another form of melon, while not grown for market, is the citron or so-called pie melon. In the Turlock district, as well as many others, this melon is profitably grown as a by-product in orchards or other places where it does not interfere with the main crop.

The feeding value of this species is not considered as good as either of the others, for, while it is a good feed to carry hogs along on, it does not fatten them.

In feeding melons in this section, watermelons and cantaloupes are usually hauled from the field and fed as soon as possible, but as the citron does not break up easily until after the first frost, they may be stored and fed at any time. As their rind is very hard, they should be cut open with an axe or other hand tool before being fed, so that the hogs can get at the inside.

There are many other farm wastes that may be profitably disposed of through the hog and the better bred he is the more certain one is of reasonable returns.—J. C. L.

HOW MISSOURI DRAGS THE ROADS.

Acting Governor Painter, author of the inter-county seat road-dragging law, says that enactment has resulted during the three months and a half that it has been in operation in adding more than 7000 miles of dragged roads to the good roads of Missouri.

When all the inter-county seat roads have been selected and dragged, there will be a total of 11,780 miles of this class of highway added. This is one-tenth of all the roads in the State.

The State pays for dragging the inter-county seat highways at $15 per mile per year, and the county does nothing beyond bringing the roads that are to form parts of the highway up to the standard fixed by Commissioner Buffum.

Swine Breeders Urge Improvements.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Although less than a year old, there is every evidence that the State Swine Breeders' Association of California will be a permanent factor in the future, if the attendance at Davis, November 7, is any criterion.

Not only was the attendance all that could be hoped for, but, what was more important, it was demonstrated that the association is awake to our livestock troubles and that through organization it will be able to accomplish many of the bigger problems that could not be hoped for through individual efforts.

In reality the meeting was to a large extent devoted to enacting resolutions upon subjects that have a direct bearing upon the present and future welfare of the swine-breeding industry in this State.

One of these problems which has been considered a trying one in the past centers around the transporting of pure-bred stock from the breeder to the buyer, and considerable discussion was given that subject, both by members and H. Light, who represented the Southern Pacific railroad.

In the past, in shipping pure-bred stock, it has been necessary for the shipper to send a man with the car, or else sign a release exempting the railroad company from any damage claims over five dollars. As a ticket had to be purchased for the man both ways, the result has been that where individual shipments were to be sent, the only safe and most economical way was to ship by express. Oftentimes this has been the cause of farmers turning down the better bred animal in favor of the grade, one case cited being that of a stockman in southern California who, after bargaining for a bull at $125, in the Sacramento valley, found that it would cost him $45 express to get the animal home. While he considered the animal well worth the breeder's price of $125, he did not feel able to pay $170, the total cost to him delivered. The illustration was given as an example of every-day practices which are factors in retarding the use of pure-bred sires, and was presented to Mr. Light to show that the railroad could greatly aid in solving the question, inasmuch as it could make some provisions for better shipping rates.

Other transportation difficulties regarding the facilities for transferring and switching cars at the State Fair grounds were taken up and discussed by members and also by J. L. McCarty, secretary of the Fair. It is expected that the resolutions later passed will be taken under consideration by the railroad soon and that steps will be taken to remedy the situation.

The other resolution of a most important character was the one calling to the attention of County Commissioners the importance of the livestock industry and

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MISCELLANEOUS.

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urging them to use a part of the Panama Exposition appropriations for county livestock exhibits.

This subject has been discussed in these columns before and seems to be of great importance to the future welfare of the stock industry, as, under the present plan, as we understand it, there will not be any provision made for demonstrating the livestock possibilities of the different counties.

Although this is the first organized request to the various county officials in charge of county exposition funds, it is expected that all of the different livestock associations in the State will submit similar resolutions, and in that way bring a much larger influence to bear.

The members present were nicely entertained by members of the faculty at the University Farm, where an inspection of the new hog barn was made and a lecture on vaccinating for hog cholera was listened to. President G. A. Murphy called the meeting to order, and, outside of the following resolutions, the only other new business was the election of C. B. Cunningham as a director.

The resolutions as passed were as follows:

Whereas, the present railroad shipping rates for less than carload lots of livestock are such as to in some cases make prohibitive the purchase of small numbers of breeding animals by people who would otherwise start in the industry, and

Whereas, the switching of livestock from the Sacramento railroad yards to the State Fair Grounds has in past years been done in an unsatisfactory manner, and

Whereas, some special inducements should be offered to livestock breeders within the State to encourage them to exhibit at the Panama-Pacific International Exposition in 1915, and

Whereas, considerable money has been appropriated by the various counties for providing exhibits at the said Panama-Pacific Exposition; be it

Resolved, that the California Swine Breeders' Association, at Davis, this 7th day of November, 1913, urge the co-operation of livestock men and all livestock breeders' associations of the State for the betterment of the following conditions:

First—Better and cheaper transportation of less than carload lots of registered livestock.

Second—That the Southern Pacific Railroad Company be asked to construct, if possible, an extension of their track to the State Fair Grounds, and that the Directors of the State Agriculture Society be urged to co-operate as extensively as possible in the carrying out of these plans.

Third—That the railroads of the State be asked to grant the same interstate shipping privileges and rates for shipments of exhibits to the Panama-Pacific Exposition as are now in vogue for the California State Fair.

Fourth—That inasmuch as the different counties of the State, in appropriating moneys for county exhibits at the 1915 Exposition, seem to be planning to spend this money largely for the exhibition of fruit, we, in the belief that no agricultural industry is of greater importance in the upbuilding of the State than the livestock industry, desire to urge upon the County Commissioners of the various counties the importance of encouraging county exhibits of livestock, and that the same effort be made by such boards of County Commissioners to secure representative exhibits of livestock as of other products.

Be it further Resolved, that a copy of these resolutions be mailed to all parties who should be influential in the betterment of the above-mentioned conditions.

(Signed) J. I. THOMPSON,
Secretary.

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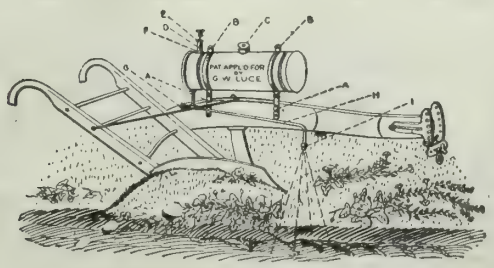

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California in the Tropic of Kafir Corn.

[Written for the PACIFIC RURAL PRESS by I. D. GRAHAM, Asst. Chief of the Department of Live stock, Panama Pacific Exposition.]

As present day methods find profit in the "tailings" of the crude mining practice of yesterday, so the Californian is learning that his agriculture has thus far only skimmed the surface and real development is yet to come. With nature's lavished endowments, this State is more nearly equipped for the fostering of every human endeavor than any other, and yet California has been exploited only for her mines, her fruits and her climate.

She has enjoyed two epoch marking periods in her history, in the discovery of gold and in the discovery of fruits, and now her citizens are learning that there is more gold in her soil than ever came from her mines; that fruit growing alone is only picking up golden grains while the ore bed remains untouched, and that her future success depends upon live stock raising and the methods which belong with it.

There can be no permanent system of profitable agriculture without live stock. Wheat will produce enormously on new lands, but without the methods and practices which belong with animal husbandry, it will fall away. Fruit will yield golden returns, but not always, and when the land begins to fail, it is vastly harder to restore its depleted fertility than it would have been to maintain or increase it had live stock been kept.

Through the Panama-Pacific International Exposition, the farmers of this State and coast will have a greater opportunity to gather of the untouched resources of the earth that has ever come to any people at any time. The great live stock exhibition, which will be a very special and prominent feature of the Panama-Pacific International Exposition, will mark a third epoch in the history of this State's prosperity.

The best in all breeds from all lands will be on display in the "view herds" which will remain during the entire Exposition period as well as in the competition for premiums in the late fall months. Quality and not quantity is sought in this Exposition and it is quality in live stock that the California breeder and farmer must have.

The cheap steer which made money for his owner on cheap land, will not do on costly acres. The 150 pound cow and the poorly bred hog become parasites which no farmer can afford to keep. Better stock is needed almost everywhere, but especially in California where land prices are so high that intensive methods are necessary.

The very common belief that corn is necessary to success with live stock and the fact that California is not ranked as a corn State, are perhaps the chief factors which have heretofore retarded progress in animal husbandry. Corn, however, is not necessary to complete success with live stock. There are the non-sacharine sorghums which supply the lack of corn.

Kafir, as an illustration, will yield more grain than corn. It will withstand drouth very much better and its feeding value, as grain, is practically the same. Milo is of quicker growth and for some localities a better crop, though its crooked neck raises objections to it because it is more difficult to harvest.

Kafir is an excellent silage crop, and it is doubtful if there exists any country wherein the silo could be used to a greater or more economical advantage than California.

Kafir is a splendid hay crop when thickly seeded and cut young and, when grown either for grain or hay, it withstands drouth better than almost any other farm crop. It does not "fire" or die when the drouth comes, but simply "stands still" until the rains or the cool dewey nights bring added moisture when it springs to rapid maturity.

The farmers of California are awakening to the value of live stock on their farms, and this question of feed becomes doubly important as the production of beef, pork or milk becomes much simplified when a cheap grain, such as is supplied by Kafir, is within easy reach.

The great live stock show to be held as one of the most important features of the Panama-Pacific International Exposition has given immediate importance to live stock on the Pacific Coast, and with this has naturally come the question of a grain crop suitable for developing and fitting animals. Such a crop is found in Kafir, the use of which will extend the grain belt almost indefinitely in California.

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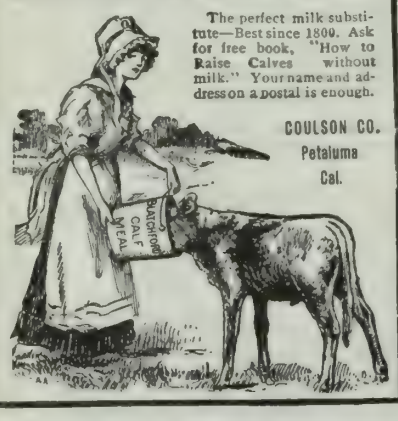

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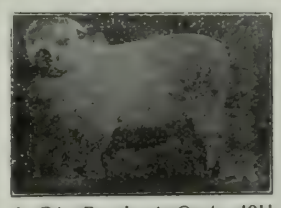

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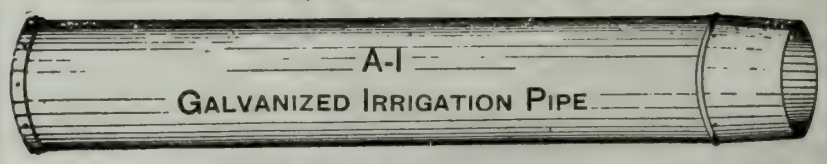

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With the Live Stock Men.

General Manager Hagenbarth, of the Wood Live Stock Co., of Idaho, while in this State recently, stated that his company, which has always dealt extensively in sheep, is stocking up many of its ranges with cattle, as it considers the present meat shortage will make beef raising more profitable than ever before.

George Wingfield recently purchased 100 acres of alfalfa land in the Fallon, Nevada, district, which he will stock up with dairy cows and also use for finishing hogs for the market. He states that he will subdivide his river ranch in the same district and will lease it to dairymen.

Mrs. Mattie Young has sold 115 acres of pasture land, located near Exeter, to the Gill brothers, of Fraxier valley.

A. M. Henry, of Farmington, the well known Poland-China breeder, delivered a carload of pure-bred Poland-China gilts to parties in southern California last week. This is one of the biggest orders reported for some time and shows that that part of the tSate will become a factor in our future swine production.

Veterinary Inspector Longely, of Fresno county, reports that there have been several cases of blackleg in that county this year and that stockmen are making a mistake by not vaccinating for it.

The highest record of any cow in the Stanislaus County Cow Testing Association was 1,311 lbs. of milk testing 5.8. The cow was an aged Durham owned by W. E. Tong. F. E. Falor, the tester, reports that the records for 25 cows entered for October shows an average production of 1140.5 lbs. of milk containing 50.5 lbs. of butter per cow.

County Livestock Inspector Griffith, of Kings county, reports that there were no contagious diseases found among the stock in that county last month.

Figures recently compiled by C. A. Starkweather, of Modesto, show that there are 1,419 dairies in Stanislaus county with a total of 30,228 cows, or an average of 21.3 head per dairy. The largest number for any one section are located around Modesto.

H. G. Armstrong, manager of the Oak Grove Dairy Farm at Woodland, reports that he has received a new boar from the East to be used in further building up his already strong Berkshire herd. In a letter from the Iowana Farms, who bred the hog, they state that he was first in his class and Junior Champion at the Iowa, Nebraska, South Dakota, and the Missouri State Fairs this year, besides being second at the Kansas City Royal, second at the Sioux City Interstate Fair, and first at the Interstate Fair held at St. Joseph, Missouri. The only time he was beaten was done by his running mate. His name is Iowana Majesty No. 179272, and from the above winnings it is evident that he is ranked very high in the East.

Henry Wheatley, of Napa, reports that he has sold the stallion Copped Hall Regent, to the Potter Huffman Land Co., of Alturas, Modoc county. This was the first prize three-year-old at the California State Fair this year.

The cattle market at the Portland Union Stock Yards, last week, was generally steady to a shade firmer than that of the week before, top quotations being: Steers, $7; cows $6 and $6.50; heifers, $6.50 and $6.75; calves, $8 and $9; bulls, $5.50 and $5.75. Depression hit the swine market late in the week with prices for prime light stuff going at $8.20. The receipts of sheep were comparatively light and the demand exceeded the supply. Prices were $4.75 for prime yearlings, $4.50 for old wethers, ewes at $4.10, and lambs were strong at $5.75.

All of the breeders who attended the Swine Breeders' meeting at Davis last week stated that they were well sold down on pure-bred stock and that the future prospects looked very bright. The question at present does not seem to be as to where the buyers of stock are to come from, but rather where the stock can be obtained.

W. G. Stimmel, of the Stanford ranch at Vina, states that their young bull, King of the Pontiacs 14th, weighs 1950 pounds. This is an extra good weight for a young dairy bull and demonstrates that good care such as is given the stock on the Vina ranch shows for itself. He also said that they planned on selling all of their Holstein stock for which they have no registration papers As most of their so-called grades are pure-breds with lost papers, this is a good opportunity for dairymen to get some good stock at reasonable prices.

The announcement has just been made that President Peter J. Shields, of the California Livestock Association, has appointed the following as a board of directors: Guy H. Miller, J. H. Glide, Wm. Saylor, Fred Bixby, Louis Titus, Romie C. Jacks, S. B. Wright, T. B. Gibson, and T. H. Ramsey.

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(Signed) W. E. Berry,
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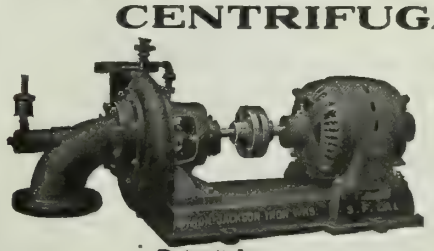

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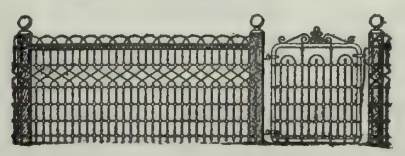

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PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

Put Alfalfa in Right.

(Continued From Last Issue.)

Contour checks also require the use of a large head of water in irrigating, in order to fill large checks rapidly, especially if the soil is light. This means large field ditches to carry the large amount of water, and these ditches in a properly constructed contour system must be carried across the field so that each check may be filled separately from a ditch. It is not desirable to irrigate one contour check from another, though often done. It is much better to water each check directly from a field ditch, to avoid waste of water and breaking of levees.

The large field ditches cut up the land badly, as also do the levees unless the checks are made large. For these reasons the contour system is considered best adapted to large fields of forty acres or more where the checks may be of large size and the amount of land occupied by the ditches is proportionately less than in small fields.

Where alfalfa is to be the only crop on the land, and especially if the soil is very light or quite heavy, the contour system leaves little to be desired, provided the checks are well laid out, the ditches located with judgment, the levees made low and broad, and the interior of the checks accurately leveled.

Even orchards, planted solidly and intended to be irrigated by flooding, may with advantage be checked in contours before planting, the rows of trees being then carried right across the land as though the levees were not there. The levees themselves would be made low and broad, and then would not interfere with cultivation and other orchard operations. Orchards irrigated by flooding should, however, be watered as far as possible in winter, when the trees are dormant and weather cool. If flooded in hot weather, the advantage of even distribution of the water is apt to be counterbalanced by injuries to the trees from scalding of the bark. Liberal watering in the winter and spring to fill up the ground with moisture, followed by good cultivation to conserve the moisture, is all that is needed for deciduous fruit trees.

Where trees and alfalfa are to be combined, the trees being set on the levees, strip checks are preferable to contours, because of the convenience of handling trees in straight rows. Also, on all medium loams that absorb water with moderate rapidity strip checks are better because they are cheaper to construct and easier to irrigate.

CONSTRUCTING CONTOUR CHECKS.

Checks of this type are necessarily somewhat irregular in size and shape on account of the slope of the land being more or less uneven as a rule. They are laid off by running contour lines at proper intervals across the face of the slope. Three men work to advantage in running the lines with a surveyor's level. One man handles the instrument, one carries the rod and the third follows him with a plow. Clamping the rod at the right height for the point of beginning, the rodman walks across the field setting up the rod every few steps and thus, under direction of the man at the instrument, quickly locates points of the same elevation. The plowman follows closely behind, connecting up these points with a furrow which marks the location of the levee. When the rodman has gone clear across the field he moves the target on his rod up or down, as the case may be, the correct distance for the contour interval previously agreed upon, and starts a new contour line, the plowman following as before.

(To Be Continued.)

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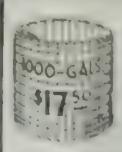

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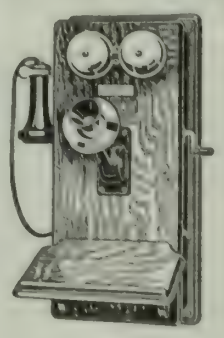

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The Condition of the Squab Business.

[By the Associate Editor.]

Squab raising is a specialized proposition, yet there are opportunities in it for the general farmer that make it possible to raise squabs on almost any farm as cheaply and easily as anywhere. In fact it is hard to think of any line of work that would be more satisfactory to the boy or girl, for every boy likes pigeons, and can look after them properly. Most of the squabs raised for the market for that matter are raised as a side line, just in the same way that a boy could raise them on the farm, though the number of people in the business is comparatively small.

The business of marketing is also getting on its feet, which is one reason that this space is given to the subject, and any one anywhere in California can now sell his squabs to advantage and need not be at the mercy of a middleman who might give him much less than he should for the squabs.

Squabs a Luxury.—In one way the selling of squabs is not on a firm basis, and that is, they are a luxury, not a staple. Go to a restaurant and order squab and the price will soar heavenward far above anything like beefsteak, fish or such common foods. That means that the consumption is limited, that unless times are good and people have plenty of money to get rid of, the demand is quite sure to be cut down and on all luxuries the dealer's profit is likely to be more extensive than on staple products. That is something that can hardly be avoided. Squabs are also a luxury in production, for they are expensive to produce. Anyone that would look at the quotations and see squabs quoted at $1.50 to $2.00 per dozen, would fall over in dismay to think of turning off squabs at that price, yet it is all that the squab producer who rows his own canoe is getting.

A Growers Organization.— The reason that a person can disregard such a dismal appearance comes in the fact that prices are not as bad as they are quoted, for squabs, though very low, are yet up to cost or production and this is the low time of the year. The squab men have an organization that sells their squabs for them and gets fair prices and nobody raising squabs or intending to need fear for the future.

The Pacific Squab Association, 3331 East 14th street, Oakland, is the outgrowth of the Pacific Utility Pigeon Association, organized a little over a year ago, simply as a society of pigeon men who wanted to meet for instruction and to devise means to put the industry on its feet.

The Squab Association itself was formed this February on the co-operative plan to handle squabs grown by members. There is a retail store at the address named and to this address all squabs of members are shipped, killed, prepared for market and distributed to the restaurants and other squab buyers. Miss C. J. Wallian is manager. This association is financed on the stock basis, shares being $10 each. About 70 dozen squabs are sold per week and legbands and grit are also purchased for members. Other materials may be purchased later.

Instead of getting only the $1.50 and $2.00 per dozen, usually the latter figure, quoted by the old line dealers, the association is giving $2.50 per dozen and formerly made it $3.00. The price naturally depends on the condition of the market and the size and condition of the squabs.

Members are all over the State, especially in the north and central part and not only in the vicinity. A large number of the squabs for example come from Stockton, where squab raisers have an association likewise, and joined as an individual, sending in their squabs on that basis.

The Pacific Squab Association is able to market nicely all the squabs that come in and supplies the Southern Pacific dining cars with all the squabs used, which provides a nice market at fair prices. It is too early to say what the ultimate success of the association will be, but the fact that the prices are so much better than those with which dealers are giving indicates that the organization is founded and run on the right lines.

Just as a little side light it can be said that even the Utility Association, which is not planned to operate directly, has been of financial gain to the members. The meetings are devoted largely to discussion of methods, etc., but some conversation in such meetings is sure to go to price of grain and other feeds. Some members found that their dealers were charging about 10 cents a hundred more than they should for grain and went where the better treated members bought. Thus they all get goods at reasonable market prices.

Squab Raising Itself.—A rough sketch of methods of squab raising is perhaps appropriate here. The squabs that are best for the market do not come from the common pigeon, which makes too small a squab, but from select varieties which mostly come from France, where people know what good eating is. The smallest of the market squab varieties is the Homer, named for its ability to find its way home from long distances and for carrying messages. This is the most prolific of the accepted sorts, but is a little too small.

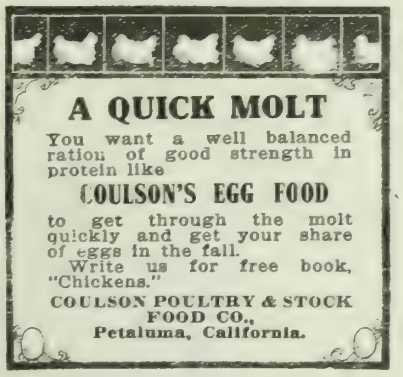
At the other end are the Runts, which are fine and large, but do not raise as many squabs as the smaller varieties. In fact, the larger the bird the fewer the squabs and vice versa, and a common custom is to use the cross bred pigeons for market squabs, a little more hardiness probably being secured by the crossing. The nature of the cross depends somewhat on the size of the squab desired, as there is a call for both large squabs and small ones. The cost of production on a weight basis and the net profits are about the same no matter what size squab is produced. The four main varieties used for crossing are Homers, Carneaux, Maltese or Hen pigeons, and Runts, given in order of size. Each pair will produce, if well bred and cared for, from 5 to 7 pair of squabs a year, with quite wide variations according to breed, individual excellence and care.

As a rule the pigeons are kept in small pens and it is the general belief that the fewer pigeons in a pen the better. C. King, vice president of the Utility Association and the owner of the largest lofts of both utility and fancy pigeons in this part of the State, keeps only 15 or 20 pairs in a pen. His houses are open front 7 feet high, 5 feet deep and 6 feet wide. The yard is 6 by 8, and the whole is wired over, the pigeons having also the roof of the houses to perch on. These pens are in a string, side by side running north and south and the houses back to back. In the front of the yard is an alley way and on the other side of that another lot of pens. In this way about 6000 pigeons are kept and the number will be increased to about 8000.

If a person wished to keep pigeons locked up like that, pens of similar size could be used, as the system is very satisfactory, or if it were desired to let them fly, that would be satisfactory, as feed would be less and the birds more vigorous, though possibly also they would produce fewer squabs. It is wise, however, to limit the number of pairs in a lot and to see that the pigeons get mated, as unmated pigeons may make themselves disagreeable as suitors to married birds. If the flock is too large it is too hard to keep track of pairs.

The pigeons themselves are very clean and healthy birds and have few troubles. If the nests, houses and pens are regularly cleaned up, good food provided, plenty of water for drinking and bathing given, they are quite sure to prosper and the percentage of loss will be small. The amount of eating produced per bird in a year is, however, much less than a good hen would give, as will be easily seen, so a good price is necessary for the squabs. If locked up, the feed for all of this has to be purchased, which is expensive and makes it appear that a small number flying and picking up feed on a general farm should be profitable. There is a good market, if well looked after, for the squabs, and the association is getting good prices and developing new markets, especially in the East, and altogether the prospects look good for present or prospective pigeon men.

Announcement is made that an egg-laying contest will be held at Dixon, Solano county, starting January 1, 1914. It is to be held under the auspices of the Sacramento Poultry Association and entries are solicited from poultry men from all parts of the State.



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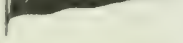

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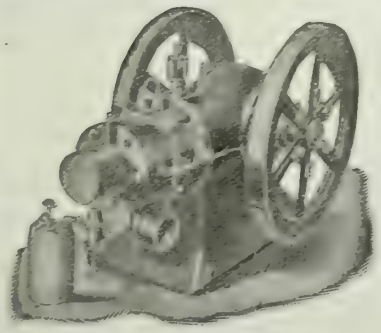
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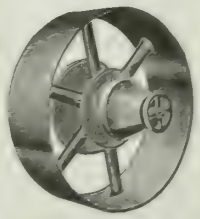
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THE EXCLUSIVE PIPE HOUSE.
PACIFIC PIPE CO.
Main and Howard Sts. San Francisco

The Home Circle.

Autumn Bulbs.

[Written for the PACIFIC RURAL PRESS.]

Bulbs are provided by nature for the purpose of carrying the plant over unfavorable periods of growth, such as a dry season or the winter season. Bulbs are essentially thickened, fleshy, subterranean buds, emitting roots from the under side. Bulbs are of various kinds, such as the true bulbs which are formed in rings and layers as hyacinths and onions, or scaly, like Easter lilies; or they are solid, like the crocus and gladiolus, botanically known as corms; or they are succulent tubers such as the dahlia and potato.

What are known as Dutch bulbs arrive in this market during the latter part of September and early October, and should be planted as soon as practicable after being offered for sale in the various stores. By December 15th they should all be in the ground, as they lose by being kept out longer than that date.

Bulbous plants lend a distinctive charm and beauty to the garden, which makes them very popular with people who love flowers. They are of the earliest culture and sure to produce flowers under favorable conditions.

In August before planting bulbs, the ground should be given a liberal dressing of well rotted manure, thoroughly mixed in by deep spading, say a foot deep. The idea is that the manure should be where the feeding roots of the bulbs can reach it, yet not too near the base of or touch the bulbs themselves.

This can best be accomplished by removing a few inches of top soil before applying the manure. A liberal supply of bone dust may also be worked in at the same time. After spading in the fertilizer, level the bed and apply one inch of sand. In this manner bulbs are assured of good drainage and may be placed in their exact position when the top soil may be carefully replaced. Note that this method insures planting at an even depth and uniform flowering of the bulbs.

Hyacinths are particularly pleasing and may be planted in any suitable garden soil provided it is well drained. If the soil is naturally stiff lighten it by adding some sand. Set them uniformly six inches deep, to the bottom of the bulbs, and five or six inches apart each way. In midsummer after flowering permit them to dry, when they may be lifted and stored in dry soil in a cool dry place and it will be found they can often be used again. It is safer, however, to purchase a supply of new bulbs each year. Bulbs of marketable size are usually 4 or 5 years old.

Color schemes may easily be worked out by consulting any of the bulb catalogues where the named varieties are classified according to color.

Tulips should have a large supply of fibrous roots to produce large and perfect flowers. This is more important than mere size of the bulbs. Large bulbs, without good fibrous root system, cannot produce perfect flowers. Tulips love moisture, but should have perfect drainage. In this climate we recommend late long stemmed varieties, since the early sorts tend to flower without taking time to produce a long stem. The Darwin and the late flowering varieties of tulips are especially well adapted for planting on this coast. They are easy to grow and give fine blooms. Tulips can be had in all colors, both single and double.

The narcissus is another class of bulbs that lend a peculiar and distinctive charm to the spring garden and are of easy culture. Plant the bulbs six to eight inches deep and three inches apart, and allow them to grow until they show strong groups, or show signs of exhaustion from numerous offsets. They bloom in March and April.

Crocus are among the earliest spring flowering bulbs. Anemones produce beautiful flowers and come in a great variety of dazzling colors.

Ranunculus, too, are conspicuous for beauty of form and bright colors. They bear their blossoms on stems about 9 inches high and are excellent as cut flowers. The bulbs should be planted with the finger-like projections pointing downwards and should be soaked in water for one or two hours before planting. Plant one inch deep and six inches apart. They enjoy a partial shade.

Friesias are dear little, sweet scented lilies, very popular for cut flowers. They bear six to eight flowers to a stem, the stems are from nine to eighteen inches tall. The bulbs are ready in august and tall. The bulbs are ready in August and bloom early if planted in September and October. C. A. COLMORE.

San Francisco.

Paper Is Useful.

When carpets are lifted and beaten it is a good plan to lay several thicknesses of newspapers underneath, either in place of or above the felt or brown paper sold for carpet lining. The reason for placing the newspapers next to the carpet is that printer's ink is a splendid moth preventative. For polishing windows and looking-glasses nothing is so good as a wad of damp newspaper pulp, followed by a vigorous polishing with a ball of dry paper rubbed soft in the hands. Unless the paper is made soft in this way it is likely to scratch the surface of the mirror. Paper bags from the grocery store should be saved for use when blacking the stove. The hand can be slipped into one to hold the brush with. The brush can be handled just as easily, and the hand will not be soiled.

For the Sunday-school Teacher.

A finger's breadth is an inch.

A shekel of silver is equal to about sixty-four cents.

A shekel of gold was about nine dollars and sixty cents.

A piece of silver, or a penny, was about sixteen cents.

A farthing was about four cents.

A mite was less than a quarter of a cent.

A gerah was one cent.

An ephah, or bath, contained about eight gallons.

A hin was about one and one-third gallons.

An omer was about six pints.

A day's journey was about twenty-three and one-fifth miles.

A Sabbath day's journey was about an English mile.

A cubit was nearly twenty-two inches.

A hand's breadth is about three inches.

Revival of the Shawl.

Those who possess beatiful old shawls as legacies from their grandmothers will find them fashionable wear at present, if of sufficiently delicate texture. They may be used for evening in place of scarfs, or folded around the waist as a wide sash, the corners forming the tunic so much in vogue. It is a mistake to cut up a beautiful shawl for a passing fashion; but the present style of evening wear encourages its use in various forms. A study of the fashion plates will give the possessor of a fine shawl ideas of how best to put it to decorative use on her own person.

In a provincial town a young damsel called at the postoffice, and bashfully inquired if there was a letter addressed to A. B., 10. "Business or love letter?" said the clerk, by way of a joke. Her face turned crimson as she replied, "Business letter!" As the letter was not to be found, the young woman went away, but returned shortly afterward, tapped at the window, and said in faltering accents, "Oh, sir, would you mind just having a look among the other letters?"—Sacred Heart Review.

The Children's Health-Beverage

Because it combines the elements which growing children require, because it is a palatable food drink which every child enjoys.

Ghirardelli's Ground Chocolate

is almost universally used by discriminating mothers. There is strength, satisfaction and radiant health in every cupful of this incomparable beverage.

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Suits any building—new or remodeled

THIS picture shows a room with Beaver Board Walls and Ceilings, instead of lath and plaster.

Beaver Board is a pure-wood-fibre product that comes in large sheets or panels, with a splendid surface for painting.

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TRADE MARK

Tea the Drink of the World.

[Written for the PACIFIC RURAL PRESS.]

Tea is commonly used by more people than any other prepared drink in existence. It is the standard beverage of three of the greatest and most populous nations of the world, China, India, and Japan, to say nothing of the minor nations of eastern and southern Asia. From there it has spread to Russia, across Europe to Great Britain, and across the Atlantic, or the Pacific, which is now the most common route, to the Americas, being found in the Occident as it is in the Orient, in almost every household.

Russians are famous tea drinkers and pay the highest prices. "Tea" in England is a national institution, and in China, India and Japan the whole population would not know where to turn if they did not have their tea. It is a literal necessity. The real reason why tea drinking became a necessity in those countries is that in such densely populated places all water had to be boiled before use and boiled water is tasteless and disagreeable. Tea was prepared from it and made it far more attractive than water alone could be. Although the excuse of boiled water usually does not exist in western nations, the merits of tea alone have been sufficient to build up its popularity.

China has a legend to explain the origin of the tea plant which fits in well with the affect of the beverage. A holy monk had a vow to remain awake in meditation and worship forever. One warm afternoon his meditation was too profound, his eyelids closed, and he slept. On awaking his dismay at breaking his vow was excessive and seizing his knife, he cut off the offending eyelids, throwing them on the ground with the assurity that never again could his eyes close. For this act of self denial there sprung up from the spot where the eyelids fell two trees from which the tea was first prepared. In that way the Chinese explain the reason why tea is always good and pleasant, why it brightens the mind instead of dulling it.

Tea is not a coarse, but a delicate product and only by the best of care in its culture, harvesting, preparation and packing can it come to the hands of the user in the condition under which one can properly appreciate it. After a package of fine tea is obtained it has to be made properly, and the unused tea has to be kept in as near the original condition of packing as possible. The reasons why the Russians are such users of the tea, and the English likewise, is that they know what is required to get the best from their tea.

After tea is gathered and prepared properly, it should be kept dry and tight, where none of the delicate flavors will be lost by exposure to the air and no bad flavors absorbed, for it is a fact that few people realize that tea will absorb odors and flavors of other things just as will butter, only the fact is quickly recognized in butter, while the unappreciating tea drinker will not realize what is the matter with the tea even if he does realize that it is not as it should be.

The peculiar wrapping of most well-packed teas is due to the need to protect the delicate flavors of the teas and the package should be well cared for and put where it will be uninjured by other foods or flavors until all the tea is used up.

There are few packages of first class tea but what carry full directions regarding the preparation. Some of the fundamentals for good tea are as follows: Use freshly boiled water and see that it is thoroughly boiling, not just bubbling. Stale water reboiled should never be used.

Never use a metal teapot under any conditions as it spoils the flavor of the tea. The typical teapot is always of China or earthenware, and only in such a pot can the best tea be made.

To get the best results pour the tea off the leaves after it has stood for six or seven minutes.

There are lots of ways of drinking tea. It can be taken hot or iced, with the addition of cream or sugar or both, or with neither, while for some tastes a dash of lemon makes it extremely attractive. Each man to his taste fits in exactly with tea drinking.

There are also two main classes to tea, green and black. Neither one can be said to be superior to the other, for both are of different nature, the green tea giving a lighter beverage in taste as well as color, the black tea being stronger as well as darker. In each class there is a vast difference between brands, depending upon the natural conditions of growth, the care of the trees, the method of picking and handling, the sorting over of the leaves and the kind of package. When a person gets a superior article and has the discrimination to appreciate it he will find it a great improvement over the ordinary tea as it usually comes to the home.

Ore of the Estates Where "Dalmoy Blend" Tea is Grown, Showing the Factory and Warehouses.

The Main Thing.

It was snowing hard, and the teacher sought to impress upon her charges the advisability of avoiding colds.

"This is the time," she said, "when boys and girls should be very careful while outdoors. I had a darling little brother, 8 years old. One day he took his new sled and went out to play in the snow. That evening, before going to bed, he complained of severe pains in his chest. The next morning he grew worse, pneumonia set in, and two days later he died."

The deep silence that followed this tale was finally broken when an aggressive-looking youngster in the rear of the room stood up and inquired, "Where's his sled?"

The sweet young thing was being shown through the Baldwin locomotive works. "What is that thing?" she asked, pointing with her dainty parasol. "That," answered the guide, "is an engine boiler." She was an up-to-date young lady and at once became interested. "And why do they boil engines?" she inquired again. "To make the engine tender." politely replied the resourceful guide.—Pennsylvania Punch Bowl.

He: "My dear, have you got anything interesting that I can read? I mean something harrowing,—something that will make my hair stand on end?" She: "Yes: here's my dressmaker's bill." Fliegende Blätter.

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"SA-SA-MA"	A high-grade uncolored Green Japan Tea. -	60c per lb.
"LONDON BLEND"	A good English Breakfast Black Tea. -	50c " "
"DALMOY BLEND"	The choicest Black Tea the world produces -	75c " "

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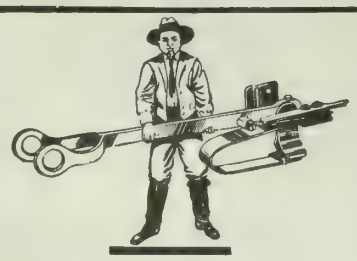

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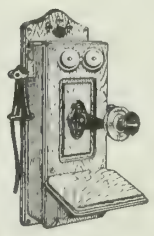
The Kellogg Telephone is the one you'll like from the start, is the one that will prove as faithful as your old mare, yet as speedy as the new automobile.



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DIRECT SUPPLY CO., INC.

341 Commercial St. San Francisco, California

THE MARKETS.

San Francisco, Nov. 12, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Wheat remains steady at about the former prices. There is a fair volume of local business under way, and Northern stock continues to arrive in considerable quantities.

California Club, ctl	$1.47½@1.50
Forty-fold	1.50 @1.52½
Northern Club	1.47½@1.50
Northern Bluestem	1.65 @1.67½
Northern Red	1.55 @1.70

BARLEY.

The better outlook for the coming crop on account of the rain has caused an easier feeling all round, with a sharp decline in spot as well as future prices. There is not much buying of an important nature, though a very good jobbing trade in feed grain is expected for the next few weeks.

Brewing and Shipping	$1.37½@1.42½
Choice Feed, per ctl	1.32½@1.35
Common Feed	1.27½@1.30

OATS.

White oats are plentiful and rather easy. Other lines remain firm at the old quotations, with a strong demand for seed, though feed grades receive little attention.

Red Feed	$1.65 @1.85
Seed	2.25 @2.30
Gray	Nominal
White	1.50 @1.55
Black Seed	2.50 @3.00

CORN.

The weakening of the Eastern market has caused a further decline locally. There is not much movement in any line, and offerings of California stock are too light to warrant any regular quotation.

California Yellow	Nominal
Eastern Yellow	$1.85 @1.90
Eastern White	Nominal

RYE.

There is a fair demand for recleaned rye for seed, at about the former range of values, but ordinary stock receives little attention.

Rye, per ctl	$1.45 @1.50
Seed	1.65 @1.70

BEANS.

The bean market is in very good shape, with practically all lines held firmly, and a number of advances. A very good shipping demand from consuming markets is reported, and a comparatively large part of the new crop has already been moved. The only exception to the general firmness at present is small whites, which are quoted a little lower. Limas and red kidneys have advanced quite sharply, blackeyes and Mexican reds also being considerably higher.

(On wharf.)

Bayos, per ctl	$3.50 @3.60
Blackeyes	4.00 @4.25
Cranberry Beans	3.75 @4.00
Horse Beans	1.90 @2.10
Small Whites	4.75 @5.00
Large Whites	3.10 @3.25
Limas	5.00 @5.20
Pea	Nominal
Pink	2.85 @3.00
Red Kidneys	4.50 @4.75
Mexican Red	4.00 @4.25

SEEDS.

There is a fairly active movement in some lines, as usual at this season. Other varieties are very quiet, but prices on all lines are well maintained at the former level.

Alfalfa	12½@15 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	7 @ 7½c
Hemp	2½@ 3 c
Millet	2½@ 2¾c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

Values are steady at the same level as for some time past, the local demand being about normal, with comparatively little shipping business from here.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.65 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Arrivals continue extremely small, as for some weeks past, the last week's receipts in San Francisco being only 1,219 tons. The consuming trade, in the local market at least, is taking hardly any interest in the market, and producers, who have their hay well under cover, are making little effort to sell. The majority of local consumers are said to have ample supplies for some time to come, though there will doubtless be a little more buying as the season advances. Some improvement in the country demand is expected since the rain, which will cause a good deal of stock to be put to work. There is some demand here for fancy grades, and a fairly good country movement of alfalfa is reported.

No. 1 Wheat, or Wheat and Oats	$16.00@17.00
do No. 2	14.00@16.00
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 80c

FEEDSTUFFS.

The demand is a little slow at the moment, but a good jobbing business is expected for the next few weeks. Bran has been coming in freely, and is offered at lower prices. Rolled barley also is lower in sympathy with the whole grain, and rolled oats are decidedly weak.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	24.00@25.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	30.00@31.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	28.00@29.00
Rolled Oats	33.00@34.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Offerings of southern vegetables continue to increase, and will soon be the leading feature, some being now cheaper than local stock. In general the market is quiet, but with diminishing supplies prices are pretty well maintained. Onions are closely held and higher, while cabbage is coming in a little more freely, and cauliflower is beginning to appear in fair quantities. Carrots also are easier. String and lima beans are easy, receiving very little attention, while peas have advanced sharply. Local tomatoes are not of very attractive appearance, and sell very slowly at the old figures, while southern stock, with larger offerings, is down to 60c. per crate. Eggplant is higher, with light supplies of local stock.

Onions: New Yellow River. ctl.	$ 1.30@ 1.60
Garlic, per lb.	[illegible]
Cabbage, per ctl	1.25@ 1.75
Cauliflower, dozen	40@ 60c
Cucumbers, per box	75c@ 1.25
Green Peppers, box	25@ 60c
Carrots, per sack	50@ 75c
Green Peas, lb	5@ 12c
String Beans, lb	2@ 6c
Summer Squash, lug box	75c@ 1.00
Okra, box	75c
Tomatoes, box	25@ 75c
Eggplant, box	60c@ 1.25
Lima Beans, lb	3@ 5c
Sprouts, lb.	3½@ 5c
Celery, doz.	30@ 40c
Rhubarb, box	75c@ 1.25
Mushrooms, lb	50@ 60c

POTATOES.

River stock has been marked up again, as offerings are limited and most of the remaining supplies are in strong hands. Many of the sweet potatoes are beginning to deteriorate and are offered at low prices, but the demand is light and the cheap offerings have weakened the price of first-class stock.

Salinas, ctl.	$ 1.90@ 2.00
New River Whites	85c@ 1.25
Sweet Potatoes, per ctl	75c@ 1.25
Oregon Burbanks	1.30@ 1.50

Dairy Produce.

POULTRY.

The local demand for chickens is picking up a little, but Eastern stock is fairly plentiful, and values, though steadily held, have not improved. More attention is being given to turkeys all the time, but supplies are running comparatively large and the tendency of prices has been downward. A few extra fine dressed birds might bring last week's top price, but as a rule 27c is top. Dealers look for a fairly good Thanksgiving trade.

Large Broilers, per lb	20 @22 c
Small Broilers, per lb	22 @24 c
Fryers, per lb	18 @19 c
Hens, extra, per lb	18 @19 c
Hens, large, per lb	17 @18 c
Small Hens, per lb	14 @15 c
Old Roosters, per lb	12 c
Young Roosters, per lb	18 @20 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	4.50@ 8.00
Turkeys, live, per lb	21 @24 c
do dressed	24 @27 c

BUTTER.

Australian stock [illegible] ive and is in [illegible] ent weak [illegible] is affecting [illegible] the move[illegible] greatly curt[illegible] extras [illegible] on a little low[illegible] than last week, but fairly firm as quoted.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	30	30	30½	30½	30½
Firsts	29	29	29	29	29	29

EGGS.

There have been a number of sharp fluctuations of late, and extras are now 2c higher than last week, and still firm. Pullets also show a slight advance. There is quite a heavy movement of storage stock.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	55	55	52	54	58½	59
Selected Pullets	43	41	42	43½	46	46

CHEESE.

The cheese market has been stiffening up a little. Y. A.'s are unchanged but firm at the advance last reported, while fancy flats are ½c higher.

Fancy California Flats, per lb	18 c
New Young Americas, fancy	17½c
Monterey or Jack Cheese	18 @19 c

Deciduous Fruit.

The week opened with light trading all around, and little activity is expected while the rain continues. Offerings of attractive berries are moderate, but there is very little demand and raspberries and strawberries, and prices are lower.

Cranberries are firmly held, with a fair demand, and the late red variety is higher. Apples are quiet locally, but very firm, with a further advance in Newtown Pippins. There is considerable business in Oregon stock, Spitzenbergs selling from $1.75 to $2.50, Jonathans at $1.25 to $1.50, and Ben Davis at $1.50 to $1.75. Several lines of grapes have advanced sharply, shipments from the country having stopped, and values are firmly held on all attractive offerings. The demands, however, is very light, and most offerings are in poor shape. Quite a lot of figs came in this week, being offered at about 75c, but found little demand.

Strawberries, chest	$ 3.00@ 6.00
Raspberries, chest	4.00@ 7.00
Huckleberries, lb	5@ 9c
Cranberries, Coos Bay, box	2.25@ 2.50
Cape Cod, bbl	9.00@ 9.50
Late Red	10.00@11.50
Apples: Baldwins	1.15@ 1.50
Spitzenbergs	1.10@ 1.75
Greenings	1.00@ 1.25
Bellefluer	1.25@ 1.75
Newtown Pippins	1.15@1.75
Common	50@ 75c
Pears, Bartlett, box	1.50@ 2.25
Grapes: Seedless, lugs	1.40@ 2.25
Malaga, crate	1.00@ 1.75
Muscat	65@ 90c
Black, lugs	60@ 75c
Tokay, lugs	75c@ 1.00
Cornichon, crate	65@ 1.00
Isabella	1.00@ 1.25
Quinces, box	50c@ 1.25
Pomegranates, box	50c@ 60c
Persimmons, box	75c@ 1.25

Dried Fruits.

The principal feature at present is the increasing firmness in the prune situation. The destruction of a considerable tonnage by fire is a factor of some importance, considering the limited quantity remaining on hand; and it now develops that some packers are running very short of supplies. The Eastern demand seems to be picking up a little, though there is no very heavy movement in that direction, and prices offered in the country stand about as before. Most packers have reduced their offers for peaches again and 4½c is about the top price for ordinary offerings. While the statistical position is fairly strong, there are said to be still a good many small lots of peaches scattered about the country. Some who have studied the situation carefully, however, say there is less in growers' hands than usual at this season, and look for an advance as soon as the consuming demand is more in evidence. The raisin situation is now altogether in the hands of the growers' company, and prices are very firmly held, with a little more interest on the part of buyers. The New York Journal of Commerce says:

"The announcement by another of the large California packing interests in response to inquiries from this end that it has no more prunes to offer, reduces the number of sellers for immediate and forward shipment from the Coast to small proportions. Of the packers who are still [illegible]liciting business, only two are under[illegible]od to be in a position to fill orders [illegible] any considerable quantity, and one [illegible] them is said to be pretty closely cleaned up in 40s. On the spot here a fair jobbing business is being done in prunes and prices are held well up to the quoted figures.

"For peaches and apricots, little forward shipment business is noted, but in view of the statistical situation a firm feeling prevails. In spot goods a moderate movement on jobbing orders is reported and prices are fully maintained. Local buyers still withhold important interest from California raisins, but there seems to be at present no pressure to sell from any quarter and prices remain as previously quoted.

Evap. Apples, 1913	6½@ 8 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4½c
Black	2½@ 3½c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 @ 4½c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4¼c

Citrus Fruits

Very little citrus fruit was shipped from California last week, but this week larger shipments were made, especially from north of the Tehachapi, to supply the Eastern Thanksgiving trade. Oranges from Tulare county are running to fair sizes and good texture. The late rains and cooler nights have been of great benefit to the fruit. Late valencias have been selling on the New York markets at very good prices, ranging from $3 to $8 per box.

The demand is rather light all around this week, but increasing activity is expected very soon. The supply of old oranges is limited, and if the new crop shows up well as to quality the early shipments expected by the end of the week should find a fairly good reception. Lemons are coming in more freely, and prices are lower, but there is only a moderate demand.

Oranges (per box):	
Valencias	$ 3.50@ 6.00
Grapefruit, seedless	3.00@ 4.50
Lemons	3.00@ 6.50
Limes	4.50@ 5.50

Nuts, Honey, Hops, Etc.

NUTS.

There is little to report in regard to nuts, as almonds are pretty closely cleaned up in the country, and the walnut crop is moving off rapidly. Arrivals of new walnuts locally have been large for the week, and there is a good jobbing movement in preparation for the holidays.

Almonds, new crop—	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop—	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

Offerings in this market are very light and while the demand is not of large proportions, enough is wanted to keep prices on a firm basis.

Comb, white, new	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

There has been considerable demand of

late, and local offerings are light, prices being firm at the former level.

Light	30 @32 c
Dark	28 @30 c

HOPS

A few scattering sales have been made lately, some being reported below the ruling figures, though the statistical situation appears strong and most stock remaining unsold is firmly held.

1913 crop	21@26c

Live Stock.

Supplies of sheep and lambs have dropped off, bringing a higher range of prices. Other classes of stock are quite firm, with no surplus in any line.

Steers: No. 1	7 @ 7¼c
No. 2	6¾@ 7 c
Cows and Heifers: No. 1	5¾@ 6¼c
No. 2	5½@ 5¾c
Bulls and Stags	2½@ 4 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	8¼@ 8½c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4¼@ 4½c
Ewes	3½@ 3¾c
Lambs: Suckling	5¾@ 6 c

DRESSED MEATS.

Steers	12¼@12¾c
Heifers	11½@12½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13 c

WOOL.

Wool continues very quiet, with prices unchanged, none of the local buyers showing much interest. A considerable proportion of the fall clip has been disposed of, however, at scattering sales.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

No very active buying is reported, but there is some shipping business, and with limited offerings values are firmly held.

Heavy Steers, over 56 lbs.	15½c
Medium	15 c
Light Steers, under 48 lbs.	15 c
Heavy Cows, over 50 lbs.	15 c
Light Cows, 30 to 50 lbs.	16 c
Kip	15 @16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	26 @27 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.75
Medium	2.25
Small	1.00
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

The horse market situation shows considerable improvement, and while little desirable work stock has appeared here this week, it is expected that the next shipment will be well received. The country demand is better than for some time past, with better feed prospects and a large amount of plowing and contract work to be done, and local drayage firms are also taking more interest in heavy horses of desirable types.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	100@150
Wagon Horses, 1250 to 1350	100@125
Delivery Horses, 1050 to 1250	75@100
Desirable Farm Mares	60@ 80

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

A meeting of the Water Users' Association of the Modesto Irrigation District was held November 6 to gather data on the mountain water supply, which will be presented to the United States Senate in an effort to defeat the Raker bill.

"As TRUE as the Name"
"AMERICAN" Surface Irrigation Pipe
"Superior from Every Standpoint"

Made in lengths of ten feet each, from a single sheet of galvanized steel, with a heavy taper collar riveted to one end.

"AMERICAN" pipe is made with the "lock seam" or turned joint—contains no rivets, except at collar. A riveted joint has only 70% of the strength of the sheet metal, while a turned joint has 100% or more. This means that "AMERICAN" pipe will last as long as the sheet steel. It is practically indestructible, and it is impossible to produce leakage in this pipe, as the turned seam is DOUBLE LOCKED. It is the pipe you will eventually use. Write for Illustrated Catalog.

We also manufacture steel tanks, wagon tanks, watering troughs, dipping tanks—in fact, anything in sheet metal. We make RIVETED pipe for underground use only.

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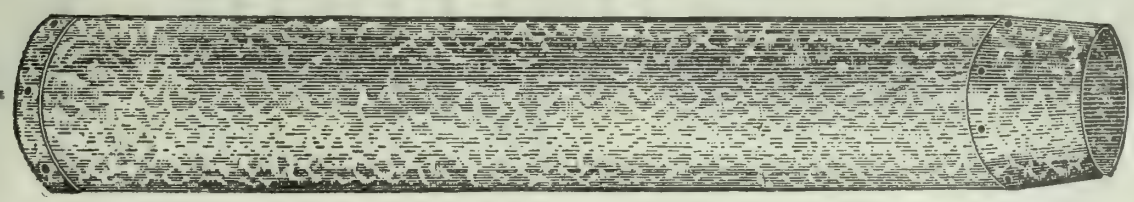

PUBLISHER'S DEPARTMENT.

Three letters are now on our desk from readers of the PACIFIC RURAL PRESS which please us immensely. Each one carries a note of thanks for services we were able to render. To our mind the agricultural journal that is able and willing to be of service is doing a great work in the West, where conditions are changing and where new questions must be solved daily. For more than forty years this journal has been doing this sort of work, and in doing so has built up a friendship for itself among the producers of the State that now makes a backing such as any institution may be proud of. Among our 18,000 readers there are thousands whose personal support we have and which only a change of policy can turn.

NEW SQUIRREL DESTROYER.

After several years study of the best methods for destroying squirrels, the California State Board of Health, in its Monthly Bulletin for September, gives the results attained as follows:

The average squirrel burrow is 14.5 feet in length, average diameter between 3.5 and 4 inches, cubic capacity, 1.45 cubic feet. The animals generally live in colonies and the burrows connect or intercommunicate, and are occasionally located on different levels, one set of burrows underlying the others. After an extensive series of experiments, an apparatus was devised by Drs. Long, Currie, and Simpson, of the Public Health Service, which was called a "Squirrel Destructor." This apparatus delivers, under slight pressure, 13.3 cubic feet of a poisonous gas of 2.1% strength into the squirrel burrow. The complete operation of treating a single burrow consumes an average of one minute of time. In order that the uses of this apparatus might be conserved to the public, the apparatus was patented.

There are two preparations obtainable, adapted for use in the squirrel destructor. One is sold under the name of Refined Carbon Bisulphide, the other as a compound bisulphide (trade name Kilmol). Both preparations are free from sulphuric acid, sulphuretted hydrogen, sulphur in solution, or other substances which will corrode metal, or clog passageways or tubes. Carbon bisulphide kills the squirrel by asphyxiation. Kilmol, in addition to producing asphyxiation, is said to contain an irritant poison which prevents the squirrel from reviving should fresh air get to the animal. Efficency, 98 to 100%. With Kilmol one treatment in conjunction with a little poisoned grain, for the purpose of destroying squirrels that may be in hiding and not in their burrows at the time the same are treated, is usually sufficient.

The squirrel destructor is applicable during any season of the year. One, or at most, two applications needed. Average cost, 18 to 28 cents per acre, depending upon number of holes per acre treated.

Pomona Pumps

Long Lived and Economical.

Made in Pomona

For Deep Well Pumping

ABUNDANCE of water through all seasons may be absolutely depended upon if you possess a Pomona Deep Well Pump. These long-lived, economical and efficient water lifters are always given the preference when a close study is made of conditions and after comparison with other pumps. In the Pomona Valley, where more time, thought and money have been spent on the subject of deep well pumping than in any other locality, the Pomona Pumps greatly outnumber all others and are daily proving their superiority.

It will pay you to come to Pomona and see us—or write for Pump Catalogue No. 54P.

Pomona Mfg. Co., Pomona, Cal.

Located in the center of the largest deep well irrigation district in the world.

We also make a full line of Gates and Valves for cement pipe irrigation.

San Joaquin Valley Agents: PEASE-BUNDY-TAYLOR CO., Porterville.

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BUY A
BOSTROM IMPROVED
FARM LEVEL
SHIPPING WEIGHT 15 LBS.
Price $15
which has TELESCOPE enabling you to read the Target over 400 yards away, and
TERRACE, DITCH, TILE DRAIN, IRRIGATE
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SIMPLE, ACCURATE, DURABLE AND COMPLETE
outfit ever made for all farm work. If your dealer hasn't one in stock, he will order for you from a nearby hardware jobber.
Write today for description of Level, and details of our MONEY BACK GUARANTEE.
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Imperial Walking Plows
I TELL YOU SIR THE IMPERIAL IS THE BEST PLOW IN THE WORLD NO MISTAKE AND YOU KNOW IT.
Molds, Landsides and Shares are interchangeable, in steel, chilled or cast iron.
Write for Prices and Catalog.
THE H. C. SHAW COMPANY
Stockton, Cal.
WHOLESALE DISTRIBUTORS.

TEN THOUSAND HEAD OF TURKEYS WANTED FOR THANKSGIVING

We want the farmers of California to raise ten thousand head of choice turkeys for our Thanksgiving trade. Last year we sold fancy dressed turkeys as high as 30 cents a pound. Commence now to get your turkeys ready for the Thanksgiving market. Have them as large and fat as possible. Write us immediately how many head you will have ready for sale at this time, as we want to keep in touch with you from now on until after Thanksgiving and Christmas. Send us the names of all of your neighbors who have turkeys and about how many head each one has on hand, and we will certainly make it to your object to do so. Mark and consign all produce you have on hand to us at San Francisco.
W. C. PRICE & CO., General Produce Commission Merchants, 211-217 Clay

The final jute crop forecast issued by the Indian Government gives a reduced output in prospect. The price of raw material is going up, and the cost of bags the coming season probably will be much above normal.

The High Dividend EGG Insurance Policy

SURELAY

BALANCED EGG FOOD

The analysis of the dry matter in an egg averages: Protein, 12%; carbo-hydrates, 11%; shell and ash, 11%.

All experienced poultry men will tell you: To get eggs, the feed you give your chickens must contain the right amount of the right food elements in digestible form—otherwise NO EGGS. This is the basis on which Surelay is constructed. See the guaranteed analysis on every sack and you will at once realize why Surelay is egg INSURANCE. Surelay is a plain, everyday feed, a balanced ration comprising a ground mixture of all the principal grains; also pure meat, blood, dry bone and gluten feed—***what's in the sack is on the sack and that's what's in the egg.***

Surelay is the **MOST ECONOMICAL CHICKEN FEED** on the market because it is the **GREAT VALUE** chicken feed.

Being a regular product of the great Sperry Flour and Cereal Mills, no extra overhead or maintenance expense is added to its selling price.

The Sperry Flour Co. does not employ poultry food specialty salesmen. This saving goes to the purchasers of Surelay thus:

Inside every sack of Surelay you will find a coupon. Send 15 coupons to any of our offices and you will receive a 90-lb. sack of Surelay containing another coupon. This profit-sharing plan alone saves you over 7½% on the original Surelay cost. Thousands of poultrymen are doing it, because they like Surelay—and appreciate cutting down feed expense.

We have a book, "Makes Hens Happy." It is a valuable treatise. Write for it to-day.

We will also send some sample coupons as a present. Also tell us if you would like a sample of Surelay by Parcel Post. It is free.

STOCK AND POULTRY FOOD DEPT., SPERRY FLOUR CO., Stockton, Cal.
Without obligation on my part, please send me your booklet, "Makes Hens Happy," and the free coupons.
Name.....
Address.....

Stock & Poultry Food Department
SPERRY FLOUR CO. Stockton Calif.

THE PACIFIC RURAL PRESS

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The Right Horse in the Right Place.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Every farmer who uses horseflesh to any extent is asking himself the question, "Where shall I stand on the horse question?" To quote one man: "We farmers are strictly 'up in the air' about the horse, because there are so many conflicting reports about future demands: some say to breed big horses, others that the auto age has put the horse out of commission for all time, and still others seem to be 'on the fence.'"

Generally speaking, it is likely that the majority are still "on the fence," waiting to see how far the mechanical age will revolutionize modes of travel and hauling.

No doubt it is a good thing to take a conservative view of the situation, for when one enters the horse-breeding game it is soon found that foresight is the key-word to success, and a blunder here or there is apt to prove costly in the end. With all due precaution, however, the "on the fence" stand should not retard better horse breeding by the farmer who has almost daily use for such farm power, especially in this climate, as with good-sized teams the labor cost is greatly reduced in all farm work; in fact, if the sale of the offspring were entirely eliminated, the saving in this respect alone would warrant a better class of farm horse than is usually found in this State today.

It is true that the city horse trade is not so active, in some lines, as it was before the auto factor entered the field, but there are certain classes of horses which have not suffered to any large extent, and many of those that were said to be entirely eliminated for the future are gradually winning their way back to recognition, as may be seen by the increasing popularity of the gaited saddle horse, which is at present making inroads on the auto among that class who are always seeking the exclusive ways of travel.

A large horse dealer in San Francisco is authority for the statement that even the carriage team will again come back into popularity, basing his assertion on the fact that good showy driving teams are being sold at a premium in the East and hard to find even at fancy prices.

Which Type to Raise.—Neither of these classes is of much economic value to the farmer, as the horse which is most likely to be of service in farm operations is the one of good size and conformation, that is able to get into the collar and do a good day's work with apparent ease, whether the work is on the plow or in the w[illegible]

On account of there being a market [illegible] the latter-named class, the practice should be to raise an ani[illegible] that will meet all requirements to the best advantage, for the average farmer's horse must not be so large as to be clumsy, and still must be large enough to foal a colt which will be sufficiently heavy for the city draft horse trade, or else small enough for the hack size, the two sizes that are most in demand for city use at present.

Drafters are classified by city horse dealers as good sound animals ranging in size from 1700 pounds up, and are mostly used for heavy trucking of all kinds. All buyers place the emphasis on the sound part, for that seems to be the weakest point of modern horse breeding. Such horses are at the present time quoted at from $250 up, according to their conformation; that is, a horse with good bone, square blocky body, and strong constitution. It should also be mentioned that white or light gray animals are not popular, as they require so much extra care. The ideal color is bay, but any dark color or nice dapple gray passes all right. The age is also a factor, horse users preferring one around seven years old, but most of those now sold range from four to six.

One of the Best Carloads of Draft Horses Ever Shipped From Salinas—Percherons, Belgians and Shires; Ages 4 to 6 Years, and Every Horse Sound.

Hack horses are those ranging in size from 1250 to 1300 pounds, and those with qualifications like the above find a ready market in San Francisco for from $180 to $250, according to their conformation.

Fortunately, the above city standards may be easily met by the farmer and still not jeopardize his qualifications, for when the ideal sized farm work mare weighing from 1250 to 1350 is bred to any of the draft bred stallions, the foal is the proper size for the city drafter, and when the same mare is bred to a Hackney or strong-boned, standard-bred stallion weighing 1200 pounds or more the hack foal is the result.

Not only are the weight requirements of the breeder and buyer almost identical, but also the requirements of soundness. As an example, take the bone spavin which is commonly found on many of our present-day horses. At first this may not seriously affect an animal, but no good buyer will purchase an animal so affected for fear that a few months' work on the city streets will break him down so badly that he is of no further use. While the same fault would not be so quickly brought out on the farm, where the work is mostly done on soft ground, a horse so affected is a gamble in either instance and usually proves an expensive buy. Other equally important faults are usually found to work

(*Continued on Page 492.*)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Nov. 18, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.46	3.85	6.67	60	40
Red Bluff	2.36	4.25	3.99	66	40
Sacramento	1.80	3.23	2.46	64	44
San Francisco	2.59	4.73	2 73	66	50
San Jose	1.82	2.85	2 08	66	42
Fresno	.46	1.46	1.53	68	44
Independence	.02	2.56	1.39	58	24
San Luis Obispo	2 46	4.08	2.58	70	42
Los Angeles	1.25	1.40	1.53	62	56
San Diego	.67	1.03	.95	72	52

The Week.

The storm which is on this week is of the right sort, both in length, breadth, and thickness. It glorifies the prophets and drowns the rain-makers: there seems to be no longer any reason either to boost one or bat the other. On another page Mr. Blochman gives the scientific reason for our current gladness, and so we can let it go at that—simply advising readers to watch higher up in this column, from week to week, and see the figures grow, for they mean money for the year and development for the future. And so we take the advice of Tule Jim and are just as glad as we can be and assume optimistic utterance for this issue.

A Good Proposition in State Building.

An excellent movement takes form this week at a meeting in Marysville in which representatives of thirty-three California counties take part. Its purpose is to bring more people to California and to distribute them when they arrive, which is generally overlooked when crowds are brought to a seaport or a railway terminal. The proposition is to raise a fund of at least $100,000 a year for a period of five years, to be equitably apportioned among the counties composing the league. This fund will be used to conduct an advertising campaign in the best mediums circulating in the East and Middle West, the British Isles and northern Europe. Supplementing the printed advertisement, railway cars containing exhibits of the products of northern California are to be equipped by the league and continuously moved from one town to another in the East and Middle West. Permanent exhibits of the same character are also to be maintained at accessible points in Sacramento, San Francisco, and other California cities. A special campaign of advertising and personal solicitation will be made to attract the attention of people to the desirability of California as a place to live and work. Such a systematic effort, on the basis of the great name which California already has, will bring us millions of people. We have less than three; we can use ten more within the next few years; we can support forty, more easily than France does, and the way to get them is to start along after them.

Proper Distribution of Immigrants.

This is really the scientific phase of the movement which appeals most strongly to our admiration. We have seen the evil of running people off ships to the purlieus of the great Atlantic seaboard cities. It is for the good of the newcomers and of present Californians that this should be prevented as far as possible. This is one thing which the newly appointed and efficiently officered Immigration Commission will have to deal with, and co-operation of all counties with their central agency suggests itself. It is anticipated that the Marysville meeting may prevail upon the railways to sell homeseekers tickets to distributed points in California and not to recognized terminals alone, and seek to persuade the railway and steamship companies to make it possible, when the Panama canal is in operation, for the immigrant to travel from his home to some interior point in California for the same sum charged him to be set down at his point of debarkation. This would prevent the congestion of aliens in the Coast cities, which is the most serious peril now facing the Pacific Coast, and assure their ready and general distribution into the interior, where they can find land or employment, and thus directly benefit themselves and others who have rural enterprises which need a larger labor supply.

The New Citric Center.

It is surely going to be a race during the next few years to see how many degrees of north latitude the citric center of California will move over. It is evidently tending toward the geographical center of the State. It seems now probable that Tulare county will market this season 4500 carloads of oranges, and some packers place the figure at 5000. This may constitute Tulare county the second largest orange-producing county in California, if not the first. If Tulare has already advanced to first place, that is the position she may hold for many years to come, for a very large proportion of her 40,000 acres planted to oranges has not yet come into bearing. In any event, she will make a good fight with some of the southern counties which are short this year. Tulare crop is reported remarkable, not only for its size, but for the quality of its fruit. It is believed that at least 95 per cent of the crop will pack as "fancy," with the remainder standard. It is in every respect the most remarkable crop that has ever been produced in that section of California.

What Students Are Doing for Themselves.

We have to rejoice once in a while over the quality of students in the higher lines of education, for we have had to do with them all our life and have learned to trust and love them. They must be in a large way the leaders of the next generation, and it is a hopeful sign that they are showing industry and self-dependence far beyond that accredited to students a generation ago. However it may have been in the past, the university students of the present day have a very high percentage of commendable quality. They are fitted for life instead of being unfitted for it as was so freely claimed half a century ago. Of course, there have always been a few students who made their own ways and had to carry heavy burdens of praise from the same people who condemned the pampered darlings of the rich who were supposed to constitute the larger part of the student body. This was never true, according to our observation—but there is no use quarreling over that point. The fact is clear that the present race of students is largely self-reliant and to a considerable degree self-supporting. Distant instances usually win more respect, so we do not indulge in our own observations. In a group of twenty-five boys taking "part time" agricultural work in five agricultural schools in Massachusetts last year, two earned more than $300 each, twelve more than $200, and only three less than $100 from their farm produce. Lest that may be taken as merely the token of a special class of students, note the report that students at Harvard University earned $56,776 in the last year while pursuing academic courses, according to the report of the secretary for student employment. The students acted in all sorts of capacities from icemen to artists' models, 1926 positions being provided for them. The largest amount earned during term time was $1800 by a supervisor and tutor. A newspaper correspondent received $600. During the summer months 529 men earned a total of $23,739, largely from farm work. Students can work all right and work profitably, and it is not necessary to go beyond the borders of California to prove it.

City Men for Farmers.

When discounting the success of city men in farming last week, we forgot to mention the farming by millionaires. We do not see much of them and are naturally forgetful. Millionaire's farming is distinctly in a class by itself and is a thoroughly commendable kind of sport. Judged by its own standards, it is prevalently successful, although judged by the business standards of millionaires it is about the poorest line of investment on earth; but that does not interest us. Millionaire farming is a constantly growing dissipation, and it is one which reformers need not lament, for it hurts no one—not even the dissipator himself. We have been reading a New York letter in which it is stated that "the wealthy and socially prominent of New York have been gradually substituting country life for their town mansions in the fashionable Fifth avenue section to trade, preferring apartment life or a suite at one of the fashionable hotels for the short winter months they remain in town. Many of them are remaining at their country homes throughout the winter, staying in town only for short periods during the opera season, the horse show, and other large attractions which interest society. Horticulture, gardening, sheep raising and dairying, to say nothing of the numerous dog fanciers to be found among society women, who own some of the largest and most valuable kennels in the world, are among the activities enjoyed by the rich." We surely do not blame the millionaires for deserting Fifth avenue. We saw blocks of their mansions last summer with doors and windows boarded up with only a few air-holes for the caretakers. We should prefer to live in the country even in an Eastern winter than in those narrow cribs of which each lot costs about a million. Farming is all right for millionaires: it gives them more fun than anything else they do.

A Ladylike Phase of It.

It may interest some of our country girls to know that in millionaire circles it is no longer fashionable to decry housework. It is a fact that the indoor phase of rural life is advancing in popular esteem, and we have a millionaire precedent for that, too, for the story comes that Helen Dinsmore Huntington, the beautiful society girl of Staatsburg, New York, who is soon to

wed Vincent Astor, is going to preside over her own kitchen. She is noted as a culinary artist, and says that no hired cook is going to make flapjacks that melt in her husband's mouth. And young Astor seems to be in the game, too, for he has more or less publicly declared that he was proud of his fiancee because she was just a "plain American girl, a good cook and a lover of home life." Miss Huntington is noted as an athlete and a motoring enthusiast. They will make their home on the old Astor estate after the wedding, and young Astor will probably proudly admit that the half of his kingdom of 65 millions was not too much to pay for his cook.

The Throne in the Home.

Of course, we understand that the desirability of the position of home-queen depends upon the attitude of society and of the man also toward it. It is clear that society is according household arts a higher standing in the scheme of things, and if the man does not learn to do so also, he will have to be rudely awakened. In Germany the courts have decided that a wife has a legal right to the regular weekly, semi-monthly or monthly allowance which her husband is accustomed to make for housekeeping expenses. If he fail to provide her with an allowance sufficient to conduct her household in a manner suitable to the family's station in life, she may proceed against him at law and the court will grant an interlocutory degree, under which, if necessary, a recalcitrant husband's wages may be garnished. The court also holds that the husband cannot escape his obligations to advance the cash by opening a line of credit at various shops for his wife. She must be in a position to buy where she can buy at the greatest advantage, and must have the money necessary to enable her to do this. The case that a man may have a spendthrift wife is provided for in the civil code. His remedy, in case the wife misuses her so-called "power of the keys," is to take her housekeeping into his own hands! Solomon has something of a reputation as a judge, but he never handed down a decision to compare with that last provision. The despairing wife now has a legal right to say: "If you don't like the way I do it, do it yourself!"

Queries and Replies.

Prune Variety for An Early District.

To the Editor: Which variety would pay the best per acre, Imperial, Sugar, or Petit prune? I have been told that Imperial and Sugar prunes do not pay well in this locality, owing to the heat in July, but if properly irrigated and cultivated, do you think they would pay better than drying peaches per acre? Which would be the best plant to get new varieties, to graft over peaches or to pull them out and replant with new stock?—Y., Winters.

We are not sure that you ought to grow prunes at all. That is a question which can only be answered on the basis of local experience. You have forcing heat early in the summer which is an advantage for some fruits, commercially at least, and a disadvantage for others. Why waste that forcing heat on a drying prune, which does better, as a rule, in a slower climate? Theoretically, if you wish to try prunes, you should try those which are large and late and which for that reason are hard to handle in the coast valleys. The Imperial is of that character, and if it bears well with you, you would have the advantage of earlier ripening and plenty of heat for drying, and you might get a benefit from putting a large cured prune on sale in advance of the coast valleys. Does it bear well? We do not know: hence you need local experience to build on. The sugar prune is naturally early for a prune: there is no advantage in forcing it, unless it be profitable as a shipping plum. The French prune has reached no great popularity in any interior foothill district. It is chiefly grown in the coast valleys and on the lower lands of the interior valley. We have no reason to think that any prune would be as profitable with you as peaches are, but in that we may be mistaken. You will notice that we are answering you speculatively. You are speculating yourself instead of making true deductions from the long experience of growers in your district, and we have to answer you by counter speculations.

As for cultural points, it is true that any fruit which does not get moisture enough to develop well will be better if that needed moisture is supplied, either by cultivation or irrigation, as local conditions indicate. Grafting into the peach is more difficult than grafting other deciduous fruits, and a good strong union is less frequently secured. It can, however, be done, and is better on the younger, thriftier branches than elsewhere. If, however, you have a lot of old neglected peach trees with sunburned bark, etc., the woodpile is the best place for them.

The Best Place in California.

To the Editor: I have been reading in the Rural Press questions you have answered. Will you be so kind as to advise me where a person with small means should locate in California? I would like to buy a small tract of land, pay a little down, put same in alfalfa for hogs, or some other suitable crop, and get work outside. Please answer by letter as I do not take your paper.—W. J. R., Sacramento.

You are so refreshingly frank in declaring that you propose to reap where you have not sown that we would answer you if we could. We must say, however, that we do not undertake to answer questions for non-subscribers and personal letters are out of our reach.

There is no best place to locate in California. There is perhaps a best place for each person, but he has to find it himself, and in most cases he has no doubt afterward that it is really the best place in the State and therefore becomes a local booster. It does not seem to matter which of a dozen places he chooses, the result is the same. In nearly all places there is a good chance to work for others, and that is the way to get ahead at the beginning, if you know about farming and can pick out the land you know suits your purpose. If you do not know farming, reverse the process: work for a farmer first and buy land afterwards.

Apple Troubles.

To the Editor: Last season I got very few apples and no perfect ones. Every apple was deformed or wormy or looked as though it was half baked. We had a heavy frost at the time the fruit was setting. Also, a good many trees were afflicted with leaf aphis this year. The trees were sprayed and pruned last January. The previous year I had a nice crop.—H. H. S., Willits.

You had at least two troubles, without mentioning the frost, which would not be affected by your January spraying. That would have killed scale insects, if you had any, but the apples were made wormy by the codlin moth and deformed by the leaf aphis, for which you must do spring and summer spraying with. If you winter-sprayed with strong lime-sulphur, you may have killed aphis eggs, but not enough to cut off a spring visitation by this pest. Spraying with kerosene emulsion, resin wash or some of the proprietary washes must be used to control leaf aphis as soon as they are seen to be hatching in the spring. For the codlin moth, several sprayings with an arsenical are required, as described in the circulars of manufacturers who advertise in our columns. Sound apples are the reward of continuous watchfulness and work. The frost probably had no effect on the apples which held on to go to the bad in other ways. You will probably not get any more nice apples without fighting for them.

Alfalfa on Heavy Land.

To the Editor: I wish to prepare my soil for alfalfa. Will subsoiling or deep plowing be the better? I have a sulky plow with 16-inch share. The manufacturers sell a subsoiler that attaches to the beam of the plow and runs in the furrow back of it. I intend to put on six head of stock. My land is a very heavy red soil. It has been farmed for grain for a great many years and has produced 25 to 30 sacks of barley in wet years. I have the land leveled and intend to either subsoil or plow deep in December, when I will put in the levees and flood to settle the ground and do the finishing. I intend to plant in February, weather permitting. Will running over the ground with a spring-tooth harrow be sufficient preparation for seeding?—L. S. V., Athlone.

By all means plow deep, rather than trust to a shallow plowing and the subsoiler. In fact, it will be all the better to put the subsoiler behind the plow running deep if the stock can stand it. Work as deep and as thoroughly as you can afford: such a piece of land needs a tractor and dynamite also perhaps. Your flooding to settle the land and the heavy rains we are likely to have would indicate a disk rather than a spring-tooth harrow to get a good seeding surface on such land.

Lime for Alfalfa.

To the Editor: I have alfalfa in sandy loam of a rather heavy type which in spots crusts and bakes late in the season. The alfalfa makes little growth on these spots after August 1st. The yield this last season was a fraction over seven tons per acre. I am thinking of applying about 500 pounds of lime to the acre and working the lime into the soil with a spring-tooth harrow. Which is the better form of lime to loosen up this soil, ground calcium carbonate or the agricultural hydrate? Is it possible to burn the alfalfa by 500 to 1000 pounds per acre applications of the hydrate?—B. W. J., Salida.

Any of the forms of lime will feed the alfalfa, but for rendering heavy soil more friable, caustic lime, such as builders use, is most energetic. Hydrated lime is more convenient to handle and spread. None of these forms of lime will burn alfalfa if applied at this time of the year to the amount you indicate; in fact, the amount may be repeated without danger, if the land seems to need more.

Forage on Sandy Land.

To the Editor: I have about three acres of sandy land which I want to plant in some hay or pasture crop. I had it planted in alfalfa, but got no crop as the land seems to become dry quickly and so hot that the young alfalfa dies out. It was planted in the springtime. Is there any way to make alfalfa grow upon sandy land? What would you think of sowing it to rye?—Enquirer, Fowler.

Alfalfa is all right on sandy land if you start early and have water ready to keep it going: for such soil requires irrigation earlier than heavy soil. You should sow alfalfa not later than February in such soil. You can sow rye now if you can use winter green feed, or sow barley if you want a hay crop; but, of course, alfalfa will yield you more continuously than any other plant.

Why the Season Will be Wet.

To the Editor: The rains have come ideally, so far; they could not have come better, for the whole State has recently got a good allotment for early November. Rains at this time start the feed when the ground is yet warm, and, unlike the earlier starting, it is so close to the main rainy period of normal rainy seasons that the probability of drying out before another good rain is eliminated. Plowing and other agricultural work can also be begun timely.

But these now self-evident facts are not what we aim to discuss—it is weather conditions. We had with a number of others forecasted a wet season, that was presumably probable after two dry seasons you might rightfully claim. But we now already have the evidence as to still further probabilities, and for that purpose are sending you the weather map of November 12, the day the rain went south and gave San Luis Obispo about two inches of rain, with copious rains as far south as San Diego.

San Luis Obispo has now practically to date the same rainfall as Eureka, the ear-mark of a coming wet season. Last year, right up even to January 1, Eureka's rainfall was preponderatingly greater than at the San Luis or Point Conception latitude. The weather map enclosed explains it. The welcome low barometer area on the 12th inst. was right off the bay region of the State. Not once did it deign to come down this far south last year; it never does in drier seasons. But in wetter seasons, and even in normal rainy seasons, the barometer very frequently comes in with its low center off Oregon and the upper California coast instead of some hundreds and even a thousand miles higher up.

There is another factor pointing toward this same tendency of the probability of storm areas striking in farther south—the cold weather east of the Rockies. Why? Throughout the summer and continuing often through the winter of dryer seasons the storm areas pass east through British Columbia and southern Alaska. When the Rocky Mountain region is cold—normally to extra normal—these storm areas cannot pass across their northerly summer latitudes, as the high barometer area, the concomitant of cold weather conditions, prevents its passage; and thus the low of the storm area is deflected southerly, as evidenced on the map.

We have often equally copious rains when a low barometer area of considerable intensity appears off the Vancouver-Washington coast, and is deflected south by the high barometer over the Rocky Mountain region.

It was cold already over a month ago at Nome, the Bering sea port. This cold from recent Eastern storm conditions seems to come down the whole Rocky Mountain system, from northern Alaska down their east slope.

Last year the whole Alaska coast was warm and open, and we had correspondingly little rain.

It seems to us that Dr. Ricard, with all his valuable forecasting, should weigh the interrelation of the cold or high barometer areas with the lows. His theory of sunspots affecting the earth's magnetism, and the intensity of this magnetism causing more storms and intenser ones, seems very probable indeed. And then, further, he states that the earth, for one important center, has its greatest magnetic center near the Aleutian Islands, causing the birth of cyclonic whirls of the atmosphere, producing these storm centers that from here move southeastward over the land and whose intensity is calculable by the sun spots. This is all very true, but the direction of these storm areas is still subject to extreme modifications by high barometer areas. We will cite a single fact. The greatest storm for any one month at Portland, Oregon, occurred in December, 1882, when about 20 inches fell. During that same period to the 30th of December only 1 inch was precipitated in San Francisco, and still less south, owing to the latter's proximity to persistent high barometer areas during that month.

Our recent storm of the 12th and 13th was not one of great intensity (a 29.8 barometer is not very low), but it came right down into our own latitude, with a high barometer to the north, concentrating all its precipitation in the central and southern parts of the State.

Our contention is, therefore, be the intensity of the Alaskan storms what they will, they must come in close to our latitude or else be deflected in our direction, to give us ample precipitation. We have those indications now, and therefore we can count on a wet season.

L. E. Blochman.

2434 Bowditch St., Berkeley.

[The weather map is, of course, correctly characterized by Mr. Blochman, and his references so clear that reproduction of it is not necessary. We therefore give our readers the statements at the first possible moment rather than delay for an engraving.—Editor.]

PROGRESS WITH ETTERSBURG STRAWBERRIES.

It is about a year since the Pacific Rural Press first announced that a variety of Ettersburg strawberries originated by Albert F. Etter, Humboldt county, would be distributed to subscribers the following spring. Plants of Ettersburg No. 80 were thus distributed all over California and in many parts of the world, and the vigor of the plants, and to some extent the quality of the fruit, has by this time been demonstrated to many of our readers, who will be interested in hearing of the progress in plant breeding by Mr. Etter since a year ago.

How an Ettersburg Strawberry Grows and Carries Its Fruit.

The accompanying illustration is of one of the Ettersburg varieties, 18 months from planting and loaded, as can be seen, with blossoms and fruit. One of the two new strawberry varieties fruited at Ettersburg since the accounts of last season were given, is a variety developed from the wild Mendocino beach strawberry, the California wood strawberry and old line domesticated varieties. This has a flavor like that of the wild blackcap raspberry. It is very dark red in color with golden yellow seeds and has moderately firm flesh.

There is also a new hybrid of the Chesapeake and Rose Ettersburg-Cape Mendocino beach, which has a large berry, glossy, high flavor and solid, crisp flesh. It has very heavy foliage. Both of these berries are of the Ettersburg type of growth.

While a large number of apple varieties from all over the country have been tried out further and good progress made in selecting those most commendable, only one variety originated on the place has been finally considered worthy of a welcome into the family of commercial apples. This is termed the Renidentia. Outside of the apples and strawberries but little plant breeding has been done.

Although the progress as described above seems small in achievement, much work has been done in breeding nevertheless, as a great number of crosses have been made and many seeds from these crosses started which, however, will not reach a final fruiting stage for about three years. These crosses include some with wild varieties never before experimented with. One of these is the cunefolia of Oregon, a plant of such vigorous growth that it often overruns pastures. It further has several unique characteristics that can hardly help but develop fine berries through hybridizing. A second of the new wild varieties is the duchesne from China, a strawberry utterly worthless for its own sake, but of distinct and unique characteristics that will give it likewise a high value in hybridizing.

Hybrids from the Pt. Arena beach strawberry, frequently classed as a sub-variety of the Mendocino beach, have also been fruited for the first time this year and have given qualities not met with heretofore in domestic or wild berries of hybrids. There has thus been much important work done in berry development and plant breeding.

Mr. Etter had a fine apple display at the Humboldt county booth at the Land Show, also a fine display of a number of his strawberry varieties preserved in glass. These were sampled by many visitors and very favorably commented on both for flavor and appearance.

One of the leading features of the horticultural exhibit at the 1915 Exposition will be a large plot of berries in space reserved by Mr. Etter. In this will be grown 100 or more different Ettersburg strawberry hybrids, at least 25 of the domestic varieties of strawberries, including all those used in developing Ettersburg berries, and wild varieties, both parents of Ettersburg berries and otherwise.

This will make a very instructive and interesting exhibit, demonstrating both the differences in the various plants and the wonderful and unexpected results that can often be secured by proper crossing.

WINTER-BEARING STRAWBERRIES WANTED.

To the Editor: Is there any published authority on strawberry growing applicable to California conditions besides Prof. Wickson's "California Fruits" and Fuller's "Strawberry Culturist"?

Can you tell me why strawberries are not produced here in commercial quantities at this time of the year and are elsewhere? Would it be on account of our summer weather or the variety of berry? The "Marshall" is used here almost entirely. What soil ingredient does the strawberry consume mostly? This to determine the fertilizer best suited for it.—C. F. C., Fresno.

To the Editor: Replying to your request that we answer the inquiry "Why strawberries are not produced in a commercial way at this season," we would say that the strawberry has a tendency to produce from early spring till frost comes in the fall, and by the time frost comes the plant has become weak from production and will not grow any berries in quantity. We have not experimented with the so-called autumn varieties and do not know what they would do. Varieties have considerable to do with season of ripening. Some varieties we have experimented

with did not ripe till in June. For a home garden one might have late berries by keeping off the flowers till August and then allow them to make fruit buds and fruit, which would bring very late fruit. This would be too expensive for commercial purposes.

We understand that the Marsall and Jessie are the only strawberries grown around Fresno. At one time the Arizona was planted to some extent. It might be well to try the autumn bearing varieties. We think this a good work for Mr. Etter to produce a winter-bearing strawberry.

As to fertilizer, we have always considered well decomposed barn manure to be the best. One experiment had with wood ashes produced good results. TRIBBLE BROS.

Elk Grove.

[A good commercial fertilizer for strawberries should contain about 8 to 10% phosphoric acid, partly from superphosphate and partly organic; 5% nitrogen, about 2% organic; and 10% potash from the sulphate. It can be applied in January or February.—EDITOR.]

Our Growing Date Industry.

[Written for the PACIFIC RURAL PRESS.]

Date growing is rapidly attaining a high standing in the hotter and drier parts of the Southwest, notably in the Coachella and Imperial valleys in California and in certain parts of Arizona. In fact, for several years it has been clear that these districts will become one of the leading date-producing sections of the world, at least occupying a leading position in the industries of the region and building up a large consumption of dates in the United States. The subject has been given an added interest by the publication of a book on "Date Growing in the Old and New Worlds," by Paul B. Popenoe, of Altadena, California, which covers the subject in a way that should make it invaluable to the grower of dates or to one contemplating so doing, or to persons interested in the development of California industries. The book is very instructive and interesting, and finely illustrated. The following is simply a summary of some of the essential points in which possible growers would be interested.

The date, for one thing, is a proven commercial success only in very hot and dry sections of the world, the Coachella and Imperial valleys fulfilling requirements admirably. Summer rains or occasional moist days in the fruiting period are a big handicap, Arizona being thus less adapted to date growing by far than the two named California valleys. However, date production for family use with selected varieties is possible in the warmer parts of the San Joaquin and Sacramento valleys, and may even become of commercial importance there.

Irrigation must be extremely abundant, water being applied in larger quantity by far than for most crops, and more frequently. Sandy soil has been considered best, though this does not seem to hold true in California. Alkali does not hurt, but rather is good, except in excessive amounts.

Propagation in the United States is conducted by the planting of seeds and of offshoots, which latter grow from the base of palms in early bearing age. The latter method is universal in the Orient and seedlings are only grown here for being cheaper. The author strongly condemns the practice, as half or more of the trees are likely to be males, a big majority of the others worthless, and the few good ones inferior to any named variety and so variable in quality that they can be sold for much less than standard price. If anyone insists on raising seedlings, he should get seeds from the United States Government or make certain described seed selections.

The offshoots are being imported from Africa, Arabia and all date-growing regions of the world, the author visiting these districts in search for improved varieties and instruction in growing and curing methods, which are told of in the book. The California grower can therefore get offshoots of the best varieties produced anywhere. These offshoots after importation are grown under Government regulations in a nursery for a year before being removed to orchard on account of quarantine regulations. This also serves to root them properly, much loss formerly having been sustained with offshoots. By the application of bottom heat, however, very recently practiced, a great saving of offshoots is made and they are started into growth much earlier. The quarantine treatment also serves to kill two date scales found all over the date-growing world, thus giving American growers a big advantage over all competitors. Date curing methods also have been devised here that enable the American grower to get a more abundant crop by a good margin and better fruit. California fruit packing methods also enable the prices to greatly surpass those for foreign dates. These advantages and the attention to growing and handling put the California grower on a very fine footing. In fact, the author figures that for a number of years the California owner of a bearing orchard should make $1000 per acre per year.

The date has both male and female trees; that is, fruit-producing and pollen-producing trees. In the latter there is as much advantage of variety selection as in the former, as some males are much greater producers of pollen than others; the pollen of some is vastly superior to others, can be kept longer, a year or so, and various other unique factors enter in. The pollenizing is done by hand, but is very easily, quickly and cheaply done. By getting the right male trees, much better than the average results are secured, and ground otherwise given to male trees can be used for females. Seedling males are about as unsatisfactory as seedling females.

An interesting point in date production is that the only systematic artificial ripening or curing experiments ever conducted have been made in America, although the Arabs get partial results by traditional methods. By this artificial ripening, more of the crop is utilized, loss from birds and insects is prevented, and the quality is frequently improved. This artificial ripening is very simple, quick and inexpensive.

There is much choice in selection of varieties, which the author discusses in detail, describing in one division of the book all the leading world varieties. There are both early ripening and late ripening dates, soft dates and dry dates, dates easy to harvest and dates expensive to harvest. In fact, there are so many points which the grower or prospective grower can take advantage of that the man who gets off on the right foot is sure to far outstrip the man that neglects to study the subject thoroughly. Yet the subject is simple, easily understood and easily practiced in field work.

The author in the preface lays special stress upon the proper spelling of date names, because for a number of reasons accuracy and uniformity with other countries is highly desirable. It is to be hoped that date growers and handlers will start off right on this line, or make corrections where they are now wrong and will not by early mistakes perpetuate wrong names. D. J. W.

A NEW EDIBLE ROOT FROM SOUTH AMERICA.

[Written for the PACIFIC RURAL PRESS by MARSDEN MANSON.]

The Department of Agriculture is engaged in the useful research for and introduction of plants, shrubs and trees from all parts of the world. These serve for new industries, food or ornamentation. Among them is an edible root from the tropical, but elevated, portions of the Andes, notably Venezuela. It is botanically known as Arricacia xanthorrhiza and belongs to the apiacea. It is a near kin to our wild parsnip, the celery root and the edible parsnip, but is more delicate, richer in protein, and is wider in its range of preparation for food.

It is reputed not to thrive at low altitudes and to grow best at from 5,000 feet upward, and at temperatures of about 20°C. or 68°F. The Department of Agriculture advises the writer that it has not been successfully grown in the United States, but he has raised it for two seasons in San Francisco. The first season two of the bulbous cuttings from the upper part of the root were received from the Department. These grew well and in the fall were sacrificed, one to science and the other to curiosity, after cutting off the bulbous upper roots for further propagation.

The larger root was sent to the University of California for analysis and the following results reported:

	Per cent.
Water	17.57
Ash	6.64
Protein	9.45
Crude fiber	5.42
Fat	1.88
Carbohydrates	59.20

This shows a very high percentage of protein which may possibly be due to the fact that the

Arricacia Xanthorrhiza

root was not analyzed until after a portion of the water had evaporated; the percentage of protein is, however, rich, and the root of high food value.

The smaller root was tried in the following ways:

Scraped clean and boiled in slightly salted water until tender:

(1) Mashed hot and served with butter, salt and pepper;

(2) Fried in small patties with butter;

(3) Sliced cold and served as a salad with oil, vinegar, salt, and black pepper.

In all of these forms the flavor was delicate, the root tender and readily digested.

The bulbous roots were cut off and planted the following season, four in San Francisco and eight in San Joaquin county at the base of the Sierra foothills east of Stockton. The severity of the frost last spring and the lack of rain killed all of these, but the experiment will again be tried.

Of the four planted in San Francisco, two grew, but the lack of moisture and inability to look after them carefully resulted in raising only two. These yielded some 10 or 12 bulbs, which will be carefully tried in several localities. A photograph of one of the two roots with tops is appended.

This valuable root can undoubtedly be acclimatized. It has the disadvantage of being a slow grower and tender as to frost, but the skill and persistent work of the staff of the Bureau of Plant Introduction, aided by other workers, will overcome these deficiencies and add a highly valuable food to our lists.

November 9, 1913.

Cost of Handling Money.

To the Editor: In your issue of November 1, 1913, you have an editorial headed "What is it worth to handle money?" and in this editorial you quote from an article written by the president of the Agricultural Credit Corporation of California, Mr. J. M. Henderson, Jr., and published in the "Sacramento Bee" under date of October 18th. You, however, quote only a part of Mr. Henderson's remarks and omit the explanatory context, so that you have done our proposition an injustice in that you make it appear that we are engaged in a "conspiracy" to take advantage of the farmers. I am giving below the full quotation from Mr. Henderson's article:

"The rule we have laid down and propose to follow is to charge the borrower not more than 2 per cent per annum more than the money costs us. This means that our rate of interest will fluctuate in accordance with investment conditions, gradually reducing, however, as the company grows in strength and reputation, and its bonds sell on a more and more favorable basis.

"Experience may show that we can do business on even a smaller margin than 2 per cent, and still allow for expenses losses, sinking funds and profits. If so, we shall reduce the margin accordingly, and this will mean even lower interest rates. Even though we did not voluntarily reduce our margin, if conditions justified it, we would be compelled to do so by the unavoidable laws of competition, and this company being the first in the field, proposes to stay in the lead. We believe 2 per cent per annum is a good business margin under present conditions. The savings banks of the country enjoy a margin of about that amount, or a little more, and our business is very closely akin to theirs."

A mere casual reading of the above quotation in its entirely must reveal to any fair-minded man the desire on our part to be fair to the borrower.

In your editorial you refer to the mortgage institutions of Europe. The European companies, semi-governmental in their nature, enjoy privileges and advantages which this company will not have, as for example, free postage, summary legal powers in dispossessing delinquent borrowers, guaranteed titles, etc., and they also enjoy natural advantages which can accrue to institutions created in this country only with age, such as fixed farm values, thorough methods of cultivation, familiarity of the investing public with the bonds issued, etc. Therefore, the small margin upon which the European companies operate is not a fair criterion by which to judge our efforts.

Now, please do not misunderstand me. I do not maintain that we are creating with our own money and efforts a purely philanthropic institution for the benefit of the farmers of the State. We believe our corporation will be profitable to those who have put up their money to organize it and are contributing their services to manage it, and we believe that this is the best sign that it will be helpful to the farmers, because no institution which will use its credit to such an extent as we will do can maintain its standing and continue its usefulness unless it can show a profit on its operations, and while it might be very advantageous to a few farmers if we would lend all our money at cost and render our services free of charge, we probably could not long continue to exist on that basis.

I have yet to be shown that in the long run the semi-governmental institutions are as advantageous for the farmers as the private institutions such as ours. Even in paternalistic Germany the semi-governmental institutions are losing ground in favor of the private institutions. Mr. Gordon Jones in Senate Document 212 states:

"Private capital is now successfully competing with these government-fostered

ALL VARIETIES

of fruits, both citrus and deciduous, as well as nuts, berries, vines, etc., in every good sort, can be obtained from these great California nurseries at attractive prices. Our stock is grown under ideal soil and climatic conditions by experts—and is guaranteed **true to name.**

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about your plans. Our advice and suggestions will be valuable to you. We know what is best adapted to your locality and can intelligently counsel with you about what and when to plant for best results.

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This Farmer increased his profits from 6 to 18 per cent

THE profits from a fifteen acre farm in Santa Clara County returned 6 per cent income on a $1,000 acre valuation from 1899 to 1911.

The ordinary successful farm methods were practiced, but it was impossible to get a crop three years in succession. The biggest year the gross crop brought $2515. Every third year the crop ran down to $150 to $425.

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Average net income for three years after deducting cost of fertilizer sprays and cost of operation, 18 per cent or $2,684 on a $1,000 per acre valuation. We'll be glad to refer you to the owner.

Our service department under the management of P. L. McCreary, who was for five years chemist in the fertilizer department at the California Experiment Station and for three years previous to that engaged in soil and water work for the United States Reclamation Service, is prepared to perform the same service for you. It costs you nothing. You owe it to yourself to know all about fertilizers and fertilization. We have just issued a book written by Mr. McCreary that will give you complete knowledge on this subject. Send for it today stating your acreage and kind of crops you raise. It's free.

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GAVIOTA
Brand Fertilizer
IS THE FERTILIZER OF QUALITY

Under this name we have various fertilizers which produce maximum results according to the exact needs of your crops. The value of a fertilizer from the standpoint of results depends upon the quality of the materials of which it is made, as well as the total amount and proportions of the various plant food elements in it. Gaviota brand contains the best.

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Successful
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Requires
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PURE ANIMAL MATTER AMMONIATES
GOLD BEAR FERTILIZERS
FOR CALIFORNIA SOILS

Animal
Fertilizers feed
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Fertilizer made according to the formula your soil and crops need, is animal fertilizer. Write for our new and carefully prepared book on fertilizer.

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TREES—UNIRRIGATED TREES
Hardy, clean, pure, reliable French Prune, Bartlett Pear, Peaches, Apples, Cherry, Almond and Grafted Walnuts on Calif. Black.
Write or wire us your wants. Special prices for large orders.
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Sempervirens Cactus Farm
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Ask for 1914 Catalogue.

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We have a magnificent stock of citrus trees in all varieties.

ORANGES

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also a fine stock of

OLIVES

and invite your inspection and inquiries.

We have also growing a full line of DECIDUOUS FRUIT AND ORNAMENTAL TREES, PLANTS, VINES, ETC. Our stock being all grown in the choicest spots in California—under perfect soil and climatic conditions—insures it's strong and thrifty and giving best results.

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Descriptive Price List covering all varieties of trees and plants will be ready about December 1st. Shall we send you a copy when ready?

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It will interest you.

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Fruit Trees, Nut Trees, including Budded and Grafted Walnuts, Walnut Seedlings.

An immense stock of ORNAMENTALS of native growth and whatever is best adapted to California conditions, for Town Lots, Avenues or Parking.

NEW IMPORTATIONS of Fruit Trees and Ornamental Stock.

Don't forget our Pedigreed French Prune Trees and our Pedigreen Blenheim Apricot.

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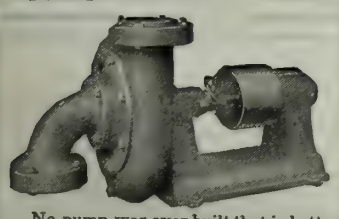

No pump was ever built that is better than this Miller Automatically Water Balanced, Enclosed Runner, Ring Oiling line of Centrifugal Pumps. No pump on the present market is as good. Our catalog will convince you. Write for it. You might as well get something that will last and cost you less to operate, than something cheap when the good costs no more than inferior. We are pleasing others, Why Not you?

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503 MARKET STREET

associations in the organization and operation of long-term mortgage banks. Bonds issued by both government-fostered and privately owned land-mortgage associations sell on a substantial parity. They have proven to be such safe and dependable securities that the savings of the working class as well as trust and court controlled funds are invested in them."

He also calls attention to some recent failures of the semi-governmental co-operative institutions, which failures seem to me to presage the ultimate downfall of the system, as they reveal its inherent fundamental error of permitting borrowers to pass upon their own securities.

This whole proposition of what is best to be done in regard to agricultural credits is one which must be handled in a fair, open-minded and unprejudiced spirit. You should not encourage among farmers that narrow minded view that everybody who makes a dollar is one dollar crooked. The laborer is still worthy of his hire as he was of old, and when an institution is founded on sound lines with a worthy object of rendering to the farmers of this State a beneficial service the proposition should have your support at every opportunity.

NORMAN LOMBARD,
Secy.-Treas., Agricultural Credit Corporation.
San Francisco.

[Our attitude is distinctly friendly to your undertaking: we consider it a timely and enterprising line of banking which may incidentally be of much advantage to farmers, and therefore we wish it success. The only general objection we have urged is that it does not meet the demand in this country which is arising on the basis of a study of European experience. In the nature of the conditions and expectations of its organizers it cannot meet that demand, because it has costs to cover and requirements of profits to fill which European institutions of similar type do not have—either because of government favors or because officers serve without compensation and stockholders receive interest and not dividends. We are not criticizing your pole—we simply say it cannot reach the persimmon. European bankers did not develop agricultural credit as it is now known abroad, and American bankers cannot meet the needs of this country—though they may do many good things.

As to the partial quotation which you deem unfair: we were simply comparing the cost of handling money here and there. We quoted enough to show that you were starting on about the basis of the savings banks' costs and profits. We had nothing to do with the hopeful promises with which this fact was gilded. They are such as every public-spirited, conservative banker cherishes—but they also do not reach the particular persimmon which the American people is intending to secure.

Your quotation from Gordon Jones is pertinent, for Mr. Jones is a bright banker also. The statement does, however, include the fact that private bankers abroad are competing on the basis of a cost of handling money of one-half to one per cent and find it profitable to handle money on such a narrow basis as that. We are not claiming that it can be done on such a basis in this country. We do not know whether it can or not, but in that, perhaps we are no worse off than the European bankers were a decade ago, for they scouted the whole proposition until government-aided-and-promoted co-operation among borrowers showed the bankers this financial wonder of the century.

We intend to be fair and generous in this matter of fair finance for farming, but we cannot stultify ourselves by shouting that half a loaf is a whole bakery.—EDITOR.]

Now Is The Time To Plant **TREES**

Millions of Dollars

are paid to fruit growers of California every year and still the fruit industry is in its infancy—An orchard planted to the proper varieties will produce

A Splendid Income

provided healthy, vigorous nursery stock is used. We have a fine assortment of first class deciduous and citrus fruit trees; also ornamental and shade trees and cordially invite your inspection.
Call and talk it over with us, or write for our 1913-14 catalogue.

SMYRNA PARK NURSERIES, Inc., Ceres, Cal.

Quality in Our Nursery Stock and Service to Our Customers

has built up our business, and no matter how small or how large the order, the same kind of Service and Quality goes into both. We are in specially favorable position to fill your planting needs for the coming season. Our stock, for this season's selling is of exceptionally high standard and this, coupled with our policy of co-operation and service for the buyer, should make your dealings with us memorable for good trees and fair treatment.

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NATURE'S CROP PRODUCER

Hydrated and Ground Carbonate of **LIME** Send for Free Booklet

AGRICULTURAL DEPT., UNIVERSITY OF CAL., REPORTS:
"Action of LIME on SOIL—Neutralizes acidity, releases potash, aids in forming humus, aids bacterial activity, aids growth of legumes, flocculates clay soils, makes sturdy trees, increases fruiting, hastens maturity of fruit, makes fruit sweeter, makes soil phosphates available."

PACIFIC LIME & PLASTER CO.
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SUPERPHOSPHATE Fertilizer

Now is an excellent time to apply this rich Phosphorus fertilizer to your

FRUIT TREES

The winter rains will cause the phosphoric acid to be thoroughly distributed throughout the soil, and this means that the available plant food will help the fruiting next year wonderfully.

THE MOUNTAIN COPPER COMPANY, Ltd.,
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Write for this **Nursery Catalog**

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Trees, Plants, Shrubs, Roses, etc. We have the finest Ornamental Stock in California. Our packing and shipping facilities are unsurpassed. If you anticipate planting Apples, Roses or any other stock, write for our beautiful 1913-14 Nursery Catalog, which is full of fine illustrations and of interest to every planter.
CLAREMONT NURSERIES, INC.,
1200-1300 Indian Hill Blvd., Claremont, Cal.

Improving Heavy Land.

Sandy soil or light soil generally is valued much higher in California than in most places, for it is usually both fertile and quite enduring, and has other qualities in its favor. The simon pure adobe is not highly regarded by most persons, for although rich in plant food and very durable, the difficulty of working it, except when it is in exactly the right condition, is likely to offset in the minds of its owners any other advantages which it may have.

There are, however, ways to overcome its refractory disposition which permit it to retain all its good qualities and make it give up most of its bad. We have talked of all these individually or collectively off and on, but the following from the English Farm and Home will be the first time for quite a while that the subject is discussed at all in detail.

The farmer of stiff clay land has many difficulties of cultivation to contend with which are unknown to the light land farmer, but he has the compensation that his land is retentive of any manure he gives it, while it usually has more natural reserves of plant food than a light soil. What it needs most is mechanical improvement to make it work more easily. There is much in knowing the right time to cultivate.

Drainage is, of course, the first essential, because clay land is generally cold and wet, owing to its water-holding powers and the impervious nature of the subsoil. Assuming the land to have been properly drained, deep stirring of the subsoil plays an important part in rendering the soil drier and warmer. This is a different matter from deep plowing. The land should be plowed first and then the steam cultivator put through as deep as possible. This will break up the subsoil without dragging clods of it to the surface. Never omit the preliminary plowing. But all this has nothing actually to do with manuring, though it is closely connected with it.

Clay Burning.—(The following will be interesting, but of little or no practical value here.)

Clay soil is plastic and sticky, because the particles of soil are so extremely fine. There is nothing gritty in its composition to keep it from running together in a close mass. If we could add tons of sharp sand, this would improve matters, but so much would be required that it is quite out of the question on a farming scale, though the gardener finds the plan useful. There is no better method of adding gritty matter than by burning some of the clay and plowing in the red ashes or ballast. A dressing of about 15 tons per acre of such burned clay will work a vast improvement in clay land. Moreover, it is a lasting improvement, because the burnt clay can never again become sticky, but remains always in the form of gritty particles in the soil, making it more porous and much easier to work. To some extent, moreover, the dressing acts as a fertilizer, the insoluble potash in the clay being rendered soluble and available to the plants by burning.

The fire should be started where it is easy to get at a good depth of subsoil, as on a slope. A good fire is made with wood and coal, and then a layer of clay put on. Fine coal (slack) has to be sprinkled in the clay before adding another layer. The ballast heap needs daily attention, adding clay and coal as soon as the fire shows signs of burning through.

Liming.—A dressing of lime is a great help toward making clay soil more workable. The reason is that it cements the very fine particles in the clay into larger bodies, which do not cling together so tenaciously. The benefit has to be experienced to be fully believed. At the same time the lime releases insoluble potash, of which clay generally has a large reserve.

To work this mechanical improvement in clay land, a fairly heavy dressing of lime should be given, such as two tons per acre of the ordinary quicklime in lumps. The best way to apply this is to do it evenly about the field in small heaps, covered with a few shovelfuls of soil. In a few days the lime will have slaked to a powder, when it can be spread with shovels and plowed in. This work is best done in autumn or winter, but any time while the land is vacant will do.

Manures Required.—Of course, farmyard or stable manure improves the condition of clay land. The organic matter thus supplied helps to keep the clay particles apart and render the soil more open. At the same time there is not the same demand for heavy and continuous dunging as there is on hungry light land, which seems to eat up any amount of this manure. What dung is put into clay soil remains there for some time, but on sandy soil it disappears entirely after a few months.

With regard to chemical fertilizers, the chief lack of clay soil is phosphates. There is generally plenty of potash, which is set free by lime and by the soda base in nitrate of soda. Nitrogen is present, but it becomes available slowly, as is shown by the slow decomposition of farmyard ma-

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Narcissus—Daffodils

One of the very first flowers to bloom in the Spring. "Paper White Narcissus" is practically as early as the Crocus. Do not fail to plant some of these in your garden. They are inexpensive and easily grown.

Send for our 1913 Bulb Catalogue. It fully describes some new Daffodils, and the new Poetaz Narcissus which we are offering this year and many other new and beautiful bulbs.

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Orders Now Booked for Plants and Trees for Winter Planting.

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Remember — Nitrate — and Lime is the right combination — producing right results — immediately — with the right effect in the end.

13% Nitrogen and 25-30% Soluble Lime in the form of Calcium Carbonate.

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A new and heavy yielding type. Recommended by University of California.

Brewing, Feed or Hay

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CALIFORNIA NATIVE PLANTS

Write for my new price list of California Native Plants, containing fifty-eight choice species, all of which are worthy of a place in any garden.

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Science has brought many things to the farmers and horticulturists who will accept them, but nothing of as great importance as the easy and inexpensive introduction into the soil of nitrogen-gathering bacteria.

FARMOGERM

is the trade name of the most practical and reliable culture of bacteria, and its application will not only supply deficient soil with nitrogen, but increase the tonnage of the crops a hundredfold and more.

Without and With Farmogerm Inoculation
Drawn from photographs of Alfalfa in adjoining fields.

ALFALFA PEAS CLOVERS
VETCHES BEANS FENUGREEK
SWEET PEAS ALL OTHER LEGUMES

Simple to apply before seeding, and costs only $2.00 per acre, or $9.00 for five acres.

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We have the best equipped and most up-to-date Soil Laboratory on the Coast, with a staff of skilled and experienced Agricultural Chemists.

We will make, without charge, the analysis of any soil a customer may send us, and give full advice as to what are its needs in the way of a fertilizer.

OUR SPECIALTY: BONE AND BLOOD FERTILIZERS.

Write for Booklet.

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TREES

PEDIGREED AND TRUE

Our soil grows good roots and a hardy tree, while out foot-hill district is free from every disease or pest.

Write us now concerning your next season's planting.

Our Assortment is Complete.

TREES TRUE TO NAME. The SILVA-BERGTHOLDT CO. NEWCASTLE, CALIF. PLACER NURSERIES

The Silva-Bergtholdt Co.

P. O. BOX 177 NEWCASTLE, CAL.

Ettersburg Strawberries

ARE MAKING GOOD, SO REPORTS SAY, FROM FAR AND NEAR

If you are interested in new and better strawberries, unlike anything you have had before, write to Etter and get his booklet on strawberries he has originated and strong testimonials corroborating his statements.

These new hybrid plants are three to five times more vigorous than ordinary sorts and succeed where ordinary sorts fail. **The greatest canning berries the world has ever produced** and the table quality unsurpassed. Bred largely from our native species, making typical California plants to meet California conditions of soil and climate. Many plants ready December 1st.

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HONEST TREES AT HONEST PRICES

Order your trees direct from longest established, most reliable nursery in the West. Save money—avoid disappointment. 500 acres—50 years thoroughly reliable dealings. Get our list and prices before you buy a tree : : :

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Grow **Mushrooms**

Big profits—little work, no trouble. Anyone can grow them. Plant spawn now—first crop in six weeks. You can sell more than you can grow. You always get big prices. We teach you how. Free—furnish you with the celebrated ARNDT PURE CULTURE SPAWN guaranteed to grow. Write for interesting booklet.

ARNDT MUSHROOM FARM INC.
UNION OIL BLDG. LOS ANGELES CAL.

READ-MILLER CO.

SPINELESS CACTUS

We are now offering for spring delivery—forage Robusta, Hemet, Melrose Special and Quilotta, Niagara, Gravity, fruiting. These are Burbank's improved standard varieties—send for catalogue and price list. Santa Rosa Spineless Cactus Farms, or J. I. Jewell, Santa Rosa, Cal.

FANCY ALFALFA SEED
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WRITE FOR PRICES
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116-118 E. 7th Street, Los Angeles, Cal.

nure mentioned above. Phosphates are always wanted. It is on such land that basic slag shows its greatest and most rapid benefits, and this is usually the best service of phosphates, particularly on grass land. It should be tried also for the root crops, and for autumn sown cereals. For the spring sown cereals superphosphate is generally to be preferred.

(Superphosphate is probably to be more commended than basic slag in California, considering price and effect on plants.)

BARE FALLOWING.—It is hardly possible to keep stiff clay land clean without an occasional bare fallow, which certainly does much to improve its condition. The effect is seen in improved crops for several years afterward. Weeds cannot be dragged out of clay as out of light soils, so it is necessary to kill them by baking them dry in a summer fallow. At the same time this gives a good opportunity to stir the subsoil by deep cultivation, always remembering to plow the surface first.

KILLING WEEDS WHEN YOU PLOW.

To the Editor: Referring to your answer to "Farmer," Sutter county, published in your issue of October 18, as to what can be done to control Johnson grass at this time of the year, the writer begs to call your attention to a remedy called "Nonpareil" morning glory and Johnson grass exterminator, offered for sale by Wheeler, Reynolds & Stauffer, of San Francisco, as advertised in your columns. It is a preparation with carbon bisulphide as a base. The "Presto" plow-tank and outfit, which which it is applied, also shown in the advertisement, is a new invention, designed to secure very cheap and effective distribution.

Nonpareil is very volatile and evaporates very quickly. It should not be sprinkled on top of the ground, but medium deep plowing is recommended. By having pressure on the Presto plow-tank attached to the plow beam, and the right kind of a sprinkling nozzle on the end of the pipe, you can sprinkle the full width of the furrow just ahead of the plow before the soil is turned over. By having a roller follow the plow or in case of gang plows, the full width of the plows, will make the ground firm on the surface, avoiding any evaporation, leaving the gases to penetrate the loose soil below. It is claimed that you can plant a crop less than a month after the application.

In order to obtain best results, the rainy season is the right time to use Nonpareil. The process might be called the "Driscoll process," as F. M. Driscoll, cultivating large acreages of berries and vegetables between San Jose and Hayward, has tried this remedy on a very large scale and declares it is an absolute success. He was the first party to give the manufacturers the idea of what could and what should be done to exterminate all the weeds in California.

San Francisco. P. M. PAULSON.

A staff writer of the RURAL PRESS who has seen the operations at Mr. Driscoll's and elsewhere in the vicinity, writes: "Patches of morning glory treated a year ago by hand hoeing and pouring on the substance do not show any evidences of it at present; in fact, we were shown roots at one place which had been recently treated and they were found to be killed at least 12 inches below the surface."

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TREES
WRITE FOR PRICE LIST
UNITED FRUIT CO.
NEWCASTLE, CAL.

When You Think of Spraying Think REX—Buy REX—Use REX

The Old Reliable Brand
Rex Lime and Sulphur Solution
Has Been Successfully
And Profitably Used In California For Years

For PEACH BLIGHT Use
Rex Lime and Sulphur Solution
And Use It During November or Early December
IT IS THE BEST
Fungicide-Insecticide-Vitalizer

For GENERAL CLEAN-UP SPRAY Use
Rex Lime and Sulphur Solution
—OR—
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Depending Upon What Troubles You Need Spray For.

We specialize, manufacture and sell SPRAY MATERIALS ONLY. Rex Brands are tried and true and made direct from the best of ingredients. No By-Products.

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This is My Hired Man

His name is Hercules Dynamite, and he beats four of the ordinary kind, when it comes to planting trees. He's cheaper, too.

I planted my orchard five years ago—blasted the holes in the Fall, left them open to the weather all Winter, and put the trees out in the Spring.

Hercules Dynamite

saved me time, labor and money.

Now I've got the finest young orchard in the country. My trees came into bearing sooner than any spade-planted trees you ever saw. My first year losses were less. Dynamite breaks up the ground and gives the roots a chance to grow and get nourishment. Stop stooping over a spade! Let Hercules work for you.

Write for a copy of "Progressive Cultivation," and learn how to practice it. Mention the name of your local dealer.

Address Dept. 54.

HERCULES POWDER CO.

Chronicle Building, San Francisco, Cal., U. S. A.

AGRICULTURAL REVIEW.

With the Fruit Men.

George Roeding, Claude Tribble, F. W. Popenoe, and Charles F. Collins represented this State at the American Pomological Society at Washington, November 17th.

There were 500 entries containing 2500 boxes of apples on display at the Annual Apple Show held at Spokane, Washington, this week.

The raisin shipments for the last three months have been larger, with the exception of 1912, than any other year in the history of the industry. For the three months there were 36,000 tons shipped.

It is reported that the blight has seriously damaged the apple orchards in Chelon county, Washington.

A new method of shipping fresh berries is being tried out by Dr. F. W. Bliss of Santa Cruz, who first dipped them in paraffine wax. The results are said to have been very satisfactory.

A dispatch from Fresno states that the Malaga crop is about shipped out, but that the Emperor shipments will be continued until December 1.

The Fresno Fruit Growers Co. has shipped two carloads of Emperor grapes from Wasco during the last week.

E. W. Ehmann, manager of the Ehmann Olive Co. at Oroville, states that the olive crop in that district will be the largest in the State. As much as $200 per ton has been paid in some instances where the crop was exceptionally good.

The Associated company at Fresno announces that the raisin crop is about 45% short for the year.

The Apple Annual started at Mendocino the fore part of this week and is expected to be very successful.

The annual meeting of the Gravenstein Apple Show Association was held at Sebastopol last week. It was decided to hold a show next year, but the exact location was not decided upon.

A report from Porterville states that many of the farmers around Poplar are expecting to plant olives this year.

Citrus Notes.

The first two cars of oranges shipped by the Butte County Citrus Association left Thermalito last week. From now on it is expected that the shipments will be heavy until the end of the season.

It is estimated that 60 cars of oranges per day will be shipped from Lindsay, starting this week. The fruit is coloring up very well and the quality is said to be good.

The lemon-packing season started in Fresno county last week, and it is reported that the trees are in fine shape.

A trainload of oranges shipped from Porterville last week was expected to make the remarkably quick trip to the East in 166 hours.

The first shipment of tangerines arrived in San Francisco last week from Butte county and as the stock was of good quality and color sold readily at $2.75 to $3.25 per box.

L. A. Banks & Co. of Sanger shipped their first carload of oranges last week and the quality was said to be exceptionally good.

H. V. M. Hall, quarantine inspector at San Diego, made a seizure of oranges at that port last week which were thought to be infested with the Mexican fruit-fly maggot.

The first annual convention of citrus growers was held at Riverside last week. Several hundred fruit growers from all over southern California were in attendance, and it was reported to be a big success.

General Agriculture.

The Government crop report for California for November 1 reports a smaller production for corn, potatoes, apples, pears, grapes, oranges and sugar beets than in 1912, and quality mostly inferior also. Prices to producers for most crops are much better, especially for hogs and beef cattle. Somewhat similar conditions as to production, quality and prices are given for the country in general.

The rains have delayed the wind-up of the rice harvest in the upper Sacramento. Rice should have been harvested long since, but delays in getting water on some land in early summer put the rice back several weeks. Rain does, however, very little injury to rice, so it is said. The mill at Biggs is busy and a mill may also be erected at Gridley. The rice growers have filed a request for lower rates on rice with the State Railroad Commission.

The price of Durango cotton in Imperial county opened at 16 cents f.o.b. El Centro. This is 3 cents better than ordinary upland cotton, and it will increase the popularity of this variety.

The rains have been so promising that hay prices have dropped quite a bit. Fine crops are expected next year.

A ton of cassaba seed is reported by one of the Mendocino county papers, to

SPECIALS
FOR CASH
PHOSPHATE FERTILIZE AND LIME
H. B. MATTHEWS, 733 Merchants Exchange Bldg., San Francisco.

Dead Squirrels — Bigger Crops

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KILLS EACH SQUIRREL LESS THAN 1 CENT IN MONEY MINUTE IN TIME

KILMOL used with the U. S. SQUIRREL DESTRUCTOR is the most efficient method known. It costs only 18 to 28 cents an acre, and can be used every day in the year.

The waste ball method is not efficient—costs 60c. to 75c. an acre and must be used in wet weather. Poisoned grain costs 40c to 50c an acre and must be used in dry weather; either of these methods requires from 2 to 5 applications. With KILMOL only ONE application is necessary. For these reasons and others the Government uses and recommends KILMOL.

Buy From Your Dealer KILMOL

1 Gallon Tins .....$ 1.50
5 Gallon Tins 6.00
55 Gallon Drums..... 60.50

Strychnine Sulphate 65c an ounce

Poisoned Barley (Gov't formula) $7.50 for 100-lb. drum.

If your dealer does not have KILMOL, if he does not know its advantages over other methods—then for your own protection send us his name, and we will see that you are supplied, and we will send you complete and convincing information regarding KILMOL. Write today to

THIS SQUIRREL DESTRUCTOR is an apparatus by means of which 13.3 cubic feet of KILMOL gas is forced into the squirrel burrow. The gas fills the burrow, and being heavier than air, remains in the burrow several hours, which means death to the squirrel. Failure is impossible.

$9.75

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$1.00 Worth of KILMOL today is worth $10.00 worth of crops tomorrow.

MARTINEZ NURSERY
ESTABLISHED 1884.
Offers the following varieties in strictly No. 1 Trees: 25,000 Bartlett Pear, 10,000 Apple (leading varieties), Autumn and Winter Pear, also Plum, Prune, Peach, Apricot and Almond Trees, Grape Vines, Ornamentals, etc. Price List on application.
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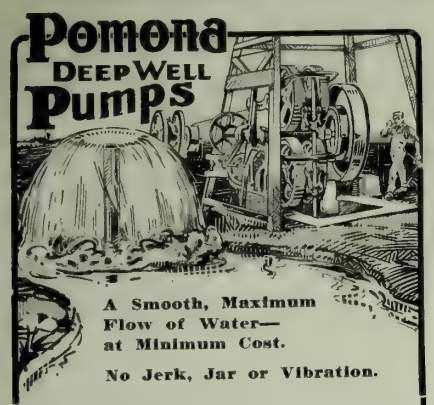

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have been shipped out of Potter valley which states that seed growing is a promising industry there.

The quality of the tomatoes shipped from Orange county this year and the size of the crop are both reported excellent. Forty cars is the amount estimated for the season.

The lima bean crop of California has been estimated at 1,125,000 bags, or 2250 carloads.

Poultry News.

At the Napa county egg-laying contest, Blom & Son's white leghorns have been headed for the first time, as the molting season has cut down their egg production greatly. W. H. Pearson's Buff Wyandottes are now in the lead. W. J. Otten's White Leghorns are third. Wallace Rutherford's White Rocks fourth, and other breeds well represented among the leaders. Blom & Son's have entered a pen of White Leghorns in the Third National Egg Laying Contest to be held soon at Mountain Grove, Missouri.

The Tulare Co-operative Poultry Association on November 15 paid out $1664.08 for eggs shipped the preceding month, or 44c per dozen. It paid out $553 for poultry received in October.

The egg quotation at San Francisco touched 60½c one day recently, a high mark of the year.

The second annual poultry show of the San Mateo Poultry Association will be held at San Mateo, December 4 to 7. Entry blanks may be had by writing to Arthur R. Schroeder, San Gregorio.

The Oregon Agricultural College has broken all records for egg production with a hen who laid 303 eggs in a year. Like other record hens at the college, she was a crossbreed.

An interesting feature of the Modesto Poultry Show is a contest for the finest-looking dozen eggs displayed.

A Fresno account states that dealers are delaying the purchase of turkeys this year. A price of 30c per pound dressed is expected.

Captain James J. Borree has secured the Sawyer ranch near Hayward, and will establish a 10,000-hen plant thereon.

Miscellaneous Notes.

The Eel River Farmers' Association is organizing near Ferndale for a joint selling company.

A tentative agreement has been reached for the boundaries of the new irrigation in Butte county. It will comprise over 29,000 acres.

Work on irrigation canals in northern Imperial county is rapidly advancing and water will be on a portion of 75,000 acres by December 1.

A. D. Lindley is preparing to develop by irrigation a section of land near Germantown, Glenn county.

Stevinson water users have organized a Water Users Association.

Land owners in Grass Valley, Nevada, are to make an effort to develop artesian water.

Petitions have been presented to Stanislaus county supervisors to bond the county for good roads.

Government surveyors have been investigating the problem of irrigation in the Indian reservation at Hoopa valley, Humboldt county.

The advisability of planning a government irrigation project in Siskiyou county is to be held at Montague, November 19, according to advices from that section. If taken up it would mean putting 100,000 acres under irrigation.

Eight hundred acres of land in the Klamath Falls section was sold last week to James Ingram for a consideration of $28,000.

It is reported that George Shima, the potato king, is storing 15,000 boxes of onions at Stockton, believing that the market will be better in the future.

INSECT PESTS
FUNGOUS DISEASES

Methods of control are beyond the experimental stage, but there are no general set of instructions that can be successfully followed in every locality and under all soil and climatic conditions.

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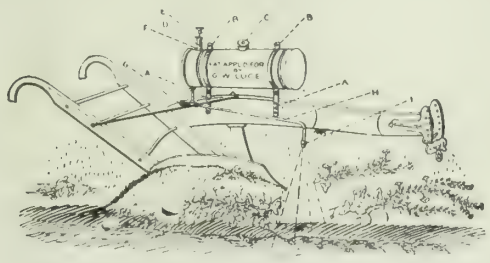

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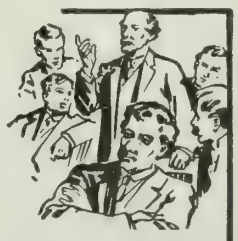

The old fertilizer formulas are giving way to the new. At every farmers' meeting one subject should be the fertilizer formula that will furnish a balanced ration to the crop and keep up the fertility of the soil. To do this the fertilizer should contain at least as much

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as Phosphoric Acid. Our note book has condensed facts essential in farmers' meetings and plenty of space to record the new things that you hear. Let us send one to you before your Institute meets.

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Saving Money With Dairy Records.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Keeping milk records is now admitted to be one of, if not the most essential parts of successful dairying, yet the proportion of dairymen who weigh and test their milk is very small, when taken as a whole.

Often the reason given for neglecting this side of the dairy is that "We don't have the time," but it is questionable whether some of our dairymen would not find time spent in that manner the most profitable of their entire year's work.

There are many instances in this State where an establishment had been run for a great many years with poor financial results that was turned into a paying enterprise through a systematic method of milk records, and in this respect the Abbott dairy at Milpitas, Santa Clara county, is a good example.

This ranch, with over 200 acres of good bottom land, having a good supply of artesian water and located so close to the San Francisco market, would be considered an ideal place to make money dairying, by most men, yet the fact is that until about two and a half years ago this, like many other dairies in the State, was not paying the owner a suitable return for the money and time expended.

The cause of this condition, as has since been learned, was principally due to the average small production per cow, as the feeding is practically the same now as it was before, the only difference in methods being that now each cow's milk is weighed twice a month and the amount put down in a book. Any cow that does not prove her efficiency in this way is immediately sold and another one purchased to take her place. As all of the product is sold as sweet milk to the city market, no butterfat testing is necessary on the grade cows, but all of the purebreds have been officially tested for both. It has always been the practice to run a large dairy on the place, there usually being from 100 to 150 head milking, and the records for the year 1909 show that with 100 head milking during the month of January the average daily production was 1.20 gallons of milk. At this time, K. W. Abbott took charge of the ranch and began to weed out the cows that were low in production, substituting in their places cows which were purchased in other places. Naturally, many of these were also poor producers and were eventually disposed of, but the ultimate result was that this continual weeding out process materially increased the average yearly production to such an extent that instead of the returns per cow being only 19½ cents a day when the milk was being sold at 16¼ cents a gallon, they continued to increase very rapidly, as is shown in the following table, where the average daily production per cow is given by months for the years 1911 and 1912:

Month.	1911. Gal.	1912. Gal.
October	1.938	2.832
November	2.305	3.093
December	3.496	2.895
January	2.774	3.093
February	2.797	3.033
March	2.984	3.333
April	3.309	3.796
May	3.472	3.490
June	2.939	2.954
July	2.974	2.890
August	3.108	2.914
September	2.927	3.005

Taking the above figures for January of the two years above shown, it will be seen that the increase for 1912 in that month was 0.319 gallons per day per cow, which, when sold at 16¼ cents a gallon, amounted to about 5 cents gain daily per cow. This, when multiplied by the number of cows kept, which, as before stated, varies from 100 to 150 head, made the total gain from $5 to $7.50 a day, and when carried on out for the year, it may be seen that the gain amounted to a good deal, but by going still further back, to January 1909, the difference per day is found to be still greater, as it was over 29 cents a cow for that year as compared with 1912.

Very little needs to be said when such convincing figures are shown as to the value of milk records, but there is still another profitable feature, inasmuch as the real value of the feed used can be seen at a glance.

As an instance of this, another glance at the above record shows that during April and May each year the average is higher than for the balance of the year. The cause of this is that during those two months the ordinary daily ration, which consists of 5 pounds of dried beet pulp and 3½ pounds of bran and green alfalfa, is changed and pea vine ensilage substituted in the place of the mill feeds. This ensilage, which is the vines and pods of the ordinary canning pea put through the silo, is bought from the cannery nearby at a very reasonable figure, and while it is not considered so good as corn ensilage, the records show that it makes a valuable addition to the alfalfa ration.

During the months from February until the middle of November, all of the alfalfa is fed green in the corrals, the balance of the year alfalfa hay and the above concentrates being used.

Finding that it was very hard to buy well-bred tuberculin tested cows from others, it was decided, about two and a half years ago, to raise all of the heifers, and as the herd was already tuberculin tested, a purebred Holstein bull was purchased to use on the grade cows, and while none of the offspring are old enough to milk, they show a marked improvement over the older stock and it is expected that the yearly average will be materially increased when they begin to freshen.

While the majority of the cows are grades, it is also the intention to build up a herd of purebred Holsteins, and, with that end in view, there are at present 29 head of registered females, the foundation of which was started two years ago.

As before mentioned, all of the mature cows have been officially tested and many of them have good butter records, among them being Chlorida Lime, a daughter of the former Nevada College cow, Staford Mercedes Aagie Tubie, Tirania of Sleepy Hollow, with a record of 21.67 pounds of butter as a four-year-old, and Zozo Paul Sierra, with 23¾ pounds of butter in seven days.

The bull which was selected to head the herd of purebreds was one out of the cow Tirania of Sleepy Hollow, but all of the stock has been bred to the bull Colantha Sir Pontiac Aagie, owned by L. A. Hall, who lives nearby, and it is expected that this cross will bring some fine young calves in another year.

At present the grades and the purebreds are all run together and milked in the same barn, but K. W. Abbott, who owns the registered stock, is building a new barn with concrete floors and other modern equipment which will be used for that class of stock, and it is hoped to have eventually enough of the registered animals to do away with all of the grades.

THE RIGHT HORSE IN THE RIGHT PLACE.

(*Continued From Page 481.*)

both ways, so it appears logical for the farmer to use the city standards upon which to base his operations.

Poor Sires Responsible.—According to one of the oldest and largest city horse-buying firms in this State, the majority of defective horses are the result of heredity caused either through blemishes in the sire or dam. To strengthen his contention, he cited a trip which he recently made into the country in search of horses weighing from 1700 pounds up. Having heard of a farmer who had several head to sell, he visited the ranch and found that there were several good-sized horses, but that they all had ring bones. Thinking that the neighboring ranch might have something suitable, a visit was paid and the same condition was found. The buyer suggested that the sire must also be affected in the same way, and later found that his surmise was correct.

From this it is evident that the two farmers mentioned were heavy losers from having used an inferior stallion, and it is claimed that many such instances are found wherever horse buyers go.

Granting that this is true, it would seem that more importance should be attached to the stallion than is usually given, for the loss to a community in two or three years' time from the use of such a horse runs into thousands of dollars.

With the weight and general conformation standards well in mind, there is still another important feature to be considered from the city trade's side, and that is the locality. Ask any city buyer where he prefers to buy and he will refer you to some hilly or dry-farmed section.

There are two reasons for this: first, a horse raised on low or irrigated land is almost sure to have soft, widely-spread hoofs, which are not usually a serious factor for farm work on soft ground, but are soon detectable when the animal works on the rough cobblestones of the city streets. The same horse raised in a hilly or rough, dry district is not affected in this way, as in climbing or walking over dry hard surfaces his hoofs become hardened by nature, and instead of spreading out they are compact and almost perfect. In this respect a horse might be compared to a goat whose continual climbing over rocks gives him a hard, sound hoof. The second reason given for a preference of the dry-land horse is that he does not lose weight in shipping as badly as the alfalfa horse, which is considered an important feature by the buyer.

The Present Demand.—As to the supply and demand of horses in the State, it has already been pointed out that the demand of the ever-increasing farmers should make the breeding of sound horses profitable, as with the growth of a denser population the need of farm horses will be more pronounced and the maintenance of a blemished horse is just as poor business for the farmer as it would be for the fruit grower to leave a badly mutilated tree in his orchard, or for a dairyman to keep a cow with only one good quarter.

While the profit side of raising sound farm mares weighing from 1250 to 1350 pounds is partly solved by the above demand, the foal question is greatly dependent upon the future of the city demands, for undoubtedly that trade is the dominating factor in the heavy horse division, for it is there that the draft horse is of most importance.

Perhaps no one can prophesy exactly what the future of the heavy horse will be, or if he did it would be only a guess, so that the only safe guide to go by is the condition of the market at present. In this respect the city horse buyer is in a better position to know than anyone else, as it is he who has to know where the best horses are grown and what the supply amounts to.

After a thorough canvass among the horse dealers in San Francisco, it was found that the present situation is about as follows: The supply of drafters is badly scattered in the State, which oftentimes is the cause of a great deal of expense to the buyer in filling his order, but what seems to be the most expensive part of buying is due to the fact that the quality of most horses is so poor that they cannot be used in city work. The buyer for one firm stated that he frequently made long trips into the country, to find after arriving that the animal had been grossly misrepresented, which meant that he had made an expensive trip for nothing. Naturally this expense is charged up to the farmer who has a sound horse, and his price is correspondingly lowered.

Even with this scattered condition, the supply of heavy horses is below the demand, and one firm last year was compelled to ship in two carloads from Iowa in order to fill their requirements. A veterinary dentist, who makes an inspection through all of the larger stables in the city every two years, states that a noticeable improvement is being made in the quality of the drafter and estimated that the yearly demand was in the neighborhood of from 250 to 300 head.

The supply of horses which are to be used for milk wagons and similar purposes is well up to the demand, most of that kind being raised on range lands, where the cost of production is much less than can ever be hoped for on the more expensive farm lands.

As to the auto-truck factor, buyers seem to be agreed that many firms which have discarded the horse have done so on account of their scarcity and believe that with a revived production of the right kind of horses the market would hold steady at or near the present prices.

One buyer was emphatic in his statement that

"If the farmers will raise the kind of horses this market needs, he'll find a place to sell them all right, but if he persists in using inferior sires and mares, no one can tell what the outcome will be."

Many of the mountain counties, such as Modoc and Lassen, have already seen the advisability of more and better horses, and are finding it a profitable business, and it may safely be said that the farmer who uses horse power to any extent would profit through the maintenance of sound brood mares for the farm work, breeding them either to good sound Percheron, Belgian, Shire, or Clydesdale stallions for the heavy-horse market, or to a standard-bred or Hackney stallion for the hack-horse size.

Hogs Profitable on a Grain Ranch.

[Written for the PACIFIC RURAL PRESS. by J. C. LOOMIS.]

It has been generally supposed that hogs could not be profitably raised in this State unless there was alfalfa or some other forage crop to furnish the stock with green feed.

It is true that some of the grain ranchers have in the past used hogs more or less extensively for cleaning up the waste grain in the stubble fields but very few have entered into the business of both breeding and raising the stock where grain was the main crop, preferring to buy up feeders in the fall of the year and only keeping them until such time as they were in condition for marketing.

That there are many locations where such farmers would find hog breeding as well as fattening profitable, especially in sections having large areas of poor rolling land adjacent, may be seen from the way that A. M. Henry, of Farmington, San Joaquin county, carries on a successful herd of swine as well as farms 1300 acres of land.

Rotation of Feeds.—In order to accomplish this it is necessary to use a good deal of ingenuity in so planning that there will be feed the year round for while there is an abundance of fattening feed after the fall threshing this has to be conserved so that it will hold out until the winter rains have brought on a new supply of feed in the form of wild winter pasture.

It is on account of this wild pasture that hog raising is particularly adapted to arid foot-hill regions for there is usually large bodies of such land which cannot be profitably farmed on account of their shallow soil and small seasonal rainfall, in those localities.

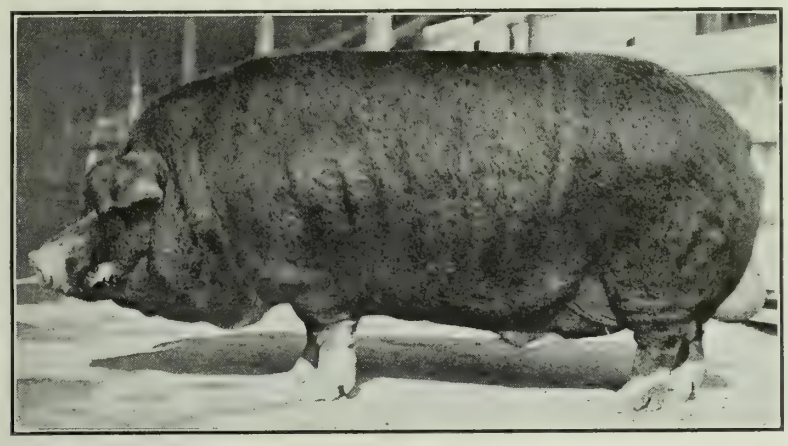
While this wild grass furnishes ample winter feed, the spring and early summer feed have to be provided for in other ways. Mr. Henry's method of growing feed for spring and early summer is to plant, as soon after the first fall rains as the ground can be plowed, a crop of barley. By the time the grass feed is cleaned up, usually after the winter rains have stopped, the hogs are turned into the green barley fields where they are kept until the stubble is ready.

One feature which is given especial consideration, in this plan is to have a sufficient supply of good fresh water available and in this respect the Knob Hill Ranch, as it is called, is fortunately situated, inasmuch as a stream from the mountains runs across the ranch and furnishes a good drinking place for a number of fields.

System of Breeding.—With a systematic method of growing the feed comes a regular season of breeding, growing, and fattening, for each season has to be taken advantage of. The sows which are purebred Poland-Chinas, are usually bred so that they will farrow in the fall that they may take advantage of the wild green feed. By having them farrow at this time or else in the winter months they are big enough to receive the full benefit of the stubble fields where they are finished for the market. One advantage in this method of hog raising is that the stock can be sold as grain fed stuff and find a more ready and profitable market.

Mr. Henry is not only successful in growing hogs for the market, but has built up one of the finest herds of purebred Poland-China hogs in the State, as was demonstrated at the State Fair this year.

The purebred herd was started 20 years ago, and now contains 150 head, headed by the boar H's Big Bone, 149311. This boar is the big type kind and has taken the Grand Championship at the State Fair for the past two years, and when one considers that he weighs over 800 pounds it is really remarkable the way that he stands up on his feet as may be seen in the picture on this page.



H's Big Bone—Head of Poland-China Herd of A. M. Henry.

As this boar is five years old he will soon be replaced by the boar Orient Chief, sired by Keepsake 109999, and out of the sow Water Pansy 329324. At the time of our visit this fellow who was born March 31, 1912, had just arrived from the East, where he was purchased from James Kemp, of Kemp, Ill. He is a fine looking individual and should prove a valuable sire to cross with the Big Bone Stock.

The plan in this ranch is to usually carry about 25 brood sows as this number is about all that can be given proper time and attention. The only extra feed given the stock other than that above mentioned is while they are being fitted for the Fair when they are given a ration consisting of 70 per cent ground wheat and 30 per cent alfalfa meal, soaked for 12 hours.

At the start this is fed three times a day and as Fair time draws nearer it is fed three times a day. While Mr. Henry does not believe in over fitting for the shows, his stock has the appearance of being in good breeding condition at all times.

By having purebreds the net returns have been found to be much larger than they would be with grades, but it would seem that anyone situated on a grain ranch with conditions similar to those on the above place would find hog raising a very profitable side line and it need not be limited to a small herd, as Mr. Henry states that by having wild feed, as he has, one can keep 50 head of hogs to each 100 acres.

DRIED VS. FRESH BEET PULP.

To the Editor: I see in your issue of November 1 an item about surgar-beet pulp. I used pulp about three years with good success. At first I tried the green or new pulp, but did not like it on account of the smell, and I don't think that it is fit to feed to dairy cows if you want pure milk, for the essence of what a cow eats goes to milk. The dried pulp is all right if it is fed right.

We purchased the dried pulp and soaked it in a tub from morning until night and from night until morning, feeding about three pints of dry pulp and the same amount of bran and cornmeal mixed, and a good quantity of alfalfa hay. Our cows were fit for the butcher the year around, and the milk flow was very satisfactory.

I consulted one of the best veterinarians in the State and he said that the drying and handling of the pulp took most of the lime out of the pulp, and that by putting on lots of water in soaking, all danger was removed. ROBERT BRACE.

Merced.

[Such accounts of actual farm practice are of great value to persons who are beginning to feed dried beet pulp or considering doing so. It will bring out clearly the fact that dried pulp has many advantages that wet pulp does not have, and also that some of the troubles that may arise if a person uses wet pulp wrongly will not develop when dried pulp is used.

Incidentally, the presence of cornmeal in the mash will be noted, as this is not commonly fed in California. Nothing, however, could go better with alfalfa hay than this, for both beet pulp and cornmeal have the qualities that are needed to offset the unbalanced qualities of alfalfa. What is said of the effect on the cows shows this. According to the theory of the thing, we should say that, considering price, dried pulp and cornmeal would be better without the bran than with it when alfalfa hay was the roughage, for bran and alfalfa are closely related in composition.

The letter was called forth by the article in the issue of November 1, referring to the injury one dairyman sustained by overfeeding wet pulp to cows. Another communication will show why dried beet pulp will not cause such trouble under any conditions. The writer says in part:

"We are aware of the injurious effect of wet pulp if fed continuously in large quantities. This has been one of the most important factors in the evolution of the drying process during the past few years, the problem being to conserve the beneficial effects of the pulp while eliminating the dangers. When you consider that the drying process is completed within an hour from the time the fresh beets first enter the sugar factory, you will see that fermentation is an impossibility. Practically all the soluble materials, including the sugar, are extracted in the batteries, and this in connection with the almost immediate removal of the moisture, eliminates entirely the difficulty spoken of."

The above communications show clearly that dried pulp would cause none of the troubles sometimes developing with wet pulp. Fermentation does not develop, lime is largely removed, cooking and drying greatly improves the feeding qualities, and its high feeding value, especially in California, makes it to be highly commended. A moderate amount of lime is rather desirable for cows in milk.

Incidentally, it can be said that a very popular way of feeding is as it comes from the sack. In this way it is like grain, though retaining the benefits of its composition in balancing a ration. When moistened, however, it has the added value of being like a green feed. Anyone else who can relate actual experience can have his say, with thanks.—ASSOCIATE EDITOR.]

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Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

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WANTED—Dairy superintendent (single) to take charge of 4 large dairies in the San Joaquin valley. Must have practical and theoretical knowledge of dairying. Salary $75 a month, room and board. State age, experience and references. Address Box 83, Pacific Rural Press.

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WANTED—Fresh Holstein, Jersey or Guernsey cows. Address Hubert E. Hunt, San Ramon Ranch Dairy, Walnut Creek.

WANTED—25,000 Burbank cactus leaves in varieties, for spring delivery. P. O. Box 265, Santa Rosa, Cal.

WANTED—Dried fruits, nuts, honey beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

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GRAFTED FRANQUETTE WALNUTS—Our nuts bring $100 more per ton than the best Santa Barbara seedlings and our Royal root grows 50% faster than the average California root. It took us 10 years to develop this combination. It is at your immediate disposal. Awarded silver medal at the San Francisco Land Show. Write us for number you need. Catalogue and prices on application. Imperial Walnut Nurseries, R. D. 7, San Jose, Cal.

ATTENTION, WALNUT GROWERS—1200 Mayette trees grafted on California Black; prolific bearer, blight immune; scions of same in any quantity; sample of nuts now ready; they must be seen to be appreciated. For information, write to GEORGE LEITZ, Box 474, Newman, Cal.

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50,000 apple trees on rented ground; must sell; order now at half price. Full Value Nursery, Petaluma, Cal.

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MISCELLANEOUS

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ALFALFA HAY—I have some No. 1 alfalfa, and it will pay you to write me for prices before buying. W. G. COPPERNOLL, Gridley, Cal., R. D. 1.

Who can offer bargain in Berkshire boar, big car alfalfa and apricot seed. J. M. ROBINSON, Sebastopol, Cal.

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With the Live Stock Men.

In a letter to this office from E. J. Weldon, of Sacramento, he states that he contemplates making a trip East, in the spring, to buy one or two carloads of Holsteins. He also states that he recently lost one of his most valuable Holstein heifers by bloat.

It is said that cattle buyers are offering as high as 13 cents on the hoof to cattlemen in the Reese River section of Nevada. The ranchers are not selling, as they believe that by holding they will be able to realize better prices later on.

State Dairy Inspector S. E. Watson reports that, contrary to the recent statements about Petaluma's milk being of poor quality, it is far better than many cities can boast of, and that it is sold much cheaper than in most other cities.

W. A. Young, the Poland-China breeder of Lodi, writes that he has recently purchased a fine new boar from the East, with which to further strengthen his herd.

A report from Porterville says that the mountain feed near there is coming on in fine shape, and that with a few more showers and some warm weather many thousand head of cattle will be brought back before Christmas.

It is said that a great deal of the Australian butter which arrived in San Francisco recently has been stored to fill contracts that a large importer has with the Government. It has been thought that this foreign butter would lower the price of the domestic product, but as it costs about 30 cents per pound it is not probable that it will lower the present price.

As an experiment, the Government is selling 500 head of young cattle to the Indians on the Klamath reservation in Oregon, to be paid for on the installment plan. This will be followed by another shipment of the same size later on, and as there is much good pasture land in the reservation, it is believed that the results will be satisfactory.

W. Fisk, of Davis, has returned from the East, where he purchased a fine bunch of pure-bred female Jerseys. The stock is strong in the Noble of Oakland blood and should make a fine foundation herd.

R. M. Dunlap, with the Simon Newman Co., at Newman, writes that that company is running 12 four-mule scrapers leveling and checking for more alfalfa. It is evident that this company is realizing the importance of plenty of feed if cattle raising is to be profitable.

It is reported that there were 750 head of cattle driven through Fort Jones, Siskiyou county, in one day recently by cattlemen who are taking their stock to the lower countries.

The following were elected as a board of directors for the Lucerne Cream & Butter Co., at Hanford, at the last annual meeting: J. H. Dawson, G. A. Dodge, L. F. Burr, Frank Frazer and M. J. Caetano. The board will organize at the next meeting of the directors.

Much of the beef arriving at the Portland Union Stock Yards last week showed a heavy shrinkage, due to short grass feeding, and as a result prices were affected. Choice steers went at about $7.40 and $6.50 was freely bid for smooth fat she stuff. Bulls and stags held steady at firm prices. Swine values lowered 20c, from the old prices, $8 being the standard price through the week, the market closing steady to strong. Sheep house business was one of the most active of the year, and while prices advanced early in the week they dropped back to their old level at the close. Prices were as follows: Yearlings, $4.75 to $4.90; old

SWINE.

POLAND-CHINAS FOR SALE—Still have six 8-month-old males and five 8-month gilts for sale. Two of these gilts first prize winners at the Fair this year; as well bred and as nice as are in the State. W. A. Young, Lodi, Cal.

REGISTERED DUROC JERSEY SWINE Some extra good young boars for sale, ready for service. Best Eastern strains. Ed E Johnson, Turlock, Cal.

REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

EUCALYPTUS STOCK FARM—Registered Duroc Swine and Holsteins; prices right. A fine March bull calf for sale. J. K. Fraser, Denair, Cal.

REGISTERED BERKSHIRE BOARS, sired by Silver Tip Duke and Third Masterpiece. V. A. Peterson, Blacks Station, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

DUROC JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

FOR SALE—Pedigreed O. I. C Swine. Also a few pedigreed Duroc Jerseys. Jack London, Glen Ellen, Cal.

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REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroghbred Berkshires.

REG. POLAND-CHINAS. Fine young stock. C. R. Hanna, R. D., Riverside.

FAIRVIEW STOCK FARM—Reg. Poland-China hogs. W. A. Young, Lodi.

CHAS. GOODMAN, breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

HORSES AND MULES.

FOR SALE—Imported French Coach Stallion, "Coeur De Lion," Reg. 4073; description, dark brown; 16¾ hands high; 1350 pounds; foaled June, 1902. Awarded first prize International Horse Show, Chicago, 1905. Sired by French Government Stallion, Ajax. Dam, Sans Tache, by Fulminant. Address Box 3, Pacific Rural Press.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

REGISTERED BLACK PERCHERON STALLION, three years old next April. Good individual; price reasonable. F. S. Israel, Linden, San Joaquin Co., Cal.

BIG BONED BREEDING JACKS for sale. Jas W McCord, Hanford.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouilletes, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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MISCELLANEOUS.

FOR SALE OR TRADE—Four black registered Percheron stallions; fine individuals. Prices $750 to $1000 each. Will take in trade used horses if sound. Also some registered Short-horns on sale. Wm. Bond, Newark, Cal.

BRAE BOURNE RANCH—Berkshire hogs and Tri-color Collies. Young stock for sale. Mr. and Mrs. C. E. Rand, R. No. 3, Box 69, Santa Rosa, Cal.

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REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

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GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

REG. GUERNSEY CATTLE and Hampshire hogs, young stock for sale. Bella Vista Stock Farm, First Nat'l. Bank Bldg., Berkeley.

CHAS. L. LEONARD, Jacinto, Glenn Co.—Registered Jersey service bulls, sired by Gerties Lad, Gerties Son, and Melias Fox, for sale.

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J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain, Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

K. W. ABBOTT, breeder of Holstein cattle. Stock for sale. Milpitas, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

FARMERS, ATTENTION!

SPECIAL ON YOUNG BOARS.

To make rom for my crop of fall pigs, I am offering, while they last, about 20 head of registered Duroc-Jersey Boars of April and May farrow, all sired by U. F. Advance 131165, 1st prize winner Cal. State Fair, at $20.00 each, F. O. B. Turlock, registered and shipped in strong light crates. Also one of my herd boars, Junior No. 1, 121831, farrowed June 9, 1910, price $40.00. This offer is subject to acceptance prior to Jan. 1st. Cash must accompany order.

Improve your stock by the use of a pure-bred sire. Order today.

ED. E. JOHNSON, Turlock, Cal.

On account of having leased my ranch, will sell my herd of 115

PURE-BRED SHROPSHIRE EWES

about half registered and all bred to choice rams.

Also my pure-bred

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For full particulars, write

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R. F. WILSON, Stockton, California.

sheep, $4.25 to $4.50; ewes, $3.90 to $4; lambs, $5.50 to $5.75.

It is reported that the number of cattle being wintered in the Fallon irrigation district is much less than usual this year, there being at present about 3,000 head. Some alfalfa farmers are finding it difficult to find a ready market for their hay, and it is thought that more dairy cattle will be necessary in order to overcome this condition.

From the manner in which the breeders are taking advantage of our free breeders' sales department, it is evident that there is a great deal of activity in the pure-bred stock business. Many of the breeders write that they are already sold out of this year's young stock and are speculating as to how they will supply the demand if the season's rainfall is up to expectations.

Many of our alfalfa growers are beginning to realize that with the present large acreage of alfalfa the price will be a good deal cheaper than it has been this year unless more dairy cows are maintained. Every indication at this time points toward high-priced dairy cows for the coming year, and it is doubtful if there are enough in this State to supply the demand.

In his report of those cows making the advanced registry of the Holstein-Friesian Association, the following records of cows owned by A. W. Morris & Sons of Woodland are given by Malcolm Gardner: Cream Cup, 106464, senior four-year-old, 19,993.6 lbs. milk, 701.87 lbs. butterfat; Riverside Faforit Tritomia, 99698, senior four-year-old, 13,562 lbs. milk, 457.99 lbs. fat.; Sadie De Kol Acme, 127019, junior four-year-old, 19,002.6 lbs. milk, 708.58 lbs. fat; Linden Spofford Promise De Kol, 146504, junior three-year-old, 13,741.9 lbs. milk, 500.39 lbs. fat; De Kol of Valley Mead 3d, 163012, senior two-year-old, 14,998.6 lbs. milk, 514.11 lbs. fat. All of these records are yearly tests, and stand well up on the list of the Association for the past month.

SMALL DAIRY BARN.

To the Editor: Will you please tell me in your paper, the best plan for a simple cow barn destined to hold only two cows and their feed?—Subscriber, San Francisco.

This is rather an unusual query and we doubt very much whether anyone has gone to much expense or trouble in building separate barn for two cows.

Most people who only keep one or two cows in this State where the winters are mild provide some form of a shed addition to another building, with stanchions and cement floor in some cases. By writing this office and remitting one dollar or sending to the Orange-Judd Co., 315-321 Fourth Ave., New York City, you can get a book entitled "Keeping One Cow," which would perhaps help to solve your trouble.

COUGH CURE FOR COW.

To the Editor: My cow coughs a great deal. Is perfectly healthy in appearance, being fat and seems contented with her food. Is there any way to stop cough.—G. B. H., Ceres.

ANSWER BY DR. E. J. CREELY.

Fl. Ext. Belladonna, 1 oz., Spirits Camphor, 2 oz., Guiaicol, 4 oz., Mineral oil, 25 oz. Mix and give one ounce four times daily.

San Francisco Veterinary College.

STIMULATING ATROPHIED MUSCLES.

To the Editor: I have a six year old horse that suffers from Atrophy of the muscles of the jaw and therefore cannot eat hay very well. Kindly advise me how to get him well.—Subscriber.

ANSWER BY DR. E. J. CREELY.

The above is impossible. Please write symptoms complete so I can make the diagnosis.

San Francisco Veterinary College.

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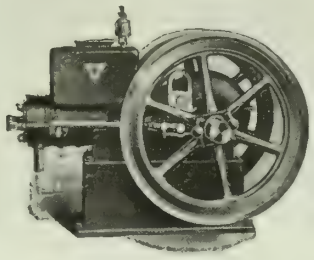

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APPLY
G. O. HILLIER
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HOLSTEIN-FRIESIAN BULLS
BRED FOR YEARLY PRODUCTION

Aralia De Kol.

Two of our herd bulls are from 28,000-lb. dams with butter records of 1085 and 1142 lbs. We have fifty cows on yearly test. The first eight junior 2-year-old heifers to finish average 471 lbs. fat (588 lbs. butter, 80% basis). Ten cows have finished, including two 3-year-olds and three 4-year-olds, with an average over 700 lbs. fat (875 lbs. butter). Fifteen cows have averaged 651 lbs. fat (813 lbs. butter). Estimate the value of a bull in your herd backed by such production. Place your order now, as they are going fast. Write for information and prices.

A. W. MORRIS & SONS, Woodland, Cal.

ASK YOUR DEALER FOR
EL DORADO COCOANUT OIL CAKE
for Milk Cows and Chickens and Young Pigs and Hogs. Cheapest food in the market today. If your dealer doesn't carry it, address
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HEREFORD BULLS
100 Hereford Bull Calves 100
FOR SALE
Single or in Carload Lots
DAVID JACKS CORPORATION - - MONTEREY, CAL.

The Nuevo Land Co., of Lakeview, now has nearly 1000 acres under irrigation, and will plant 7,000 apricot and peach trees this year on a part of it.

Mrs. L. E. Barlow, of Sebastopol, has shipped 10½ tons of dried blackberries to San Francisco. This does not include any berries raised on the place.

The Annual Dairy Convention.

[By the Associate Editor.]

The above is the proper way to describe the double convention just held at Tulare by the California Creamery Operators' Association and the California State Dairymen's Association. No one could tell where the one ended and the other began, except perhaps for the election of officers, for the gathering was just a meeting of people that were connected with dairying in one of its branches, dairying itself, creamery operation, creamery management, or the marketing of dairy produce. It was a "get together" of everybody trying to get better and more profitable dairy methods all along the line. All were well and enthusiastically represented. Furthermore, future conventions will be just the same, although some sessions may perhaps be given more to some lines of work than to others.

This getting together is as it should be, for nothing will so help the industry as harmony and co-operation. A few years ago the dairyman and creameryman were suspicious and rather unfriendly, and the creameryman and market man felt that things were not as they should be between each other, but each division is working better with the ones next to it than a very few years back. As was said at the convention in many instances: The dairyman will not prosper unless the creameryman does his part, nor the creameryman prosper unless the market man does his duty, and the same thing occurs in the other direction. Good work of all is necessary if the industry is to thrive in any of its branches.

Reciprocal Relations.—For illustration the dairyman must produce good cream, if good butter and cheese are to be made. Yet as long as the creameries will take poor cream from one dairyman, the butter from the cream of good dairymen that is mixed with this will be poor butter, and low prices will be secured all around. The start in getting good cream is not with the dairyman but with the creameryman; or better put it, dairymen actually cannot afford to go to the trouble and expense of producing good cream while the creameries will pay as much for dirty cream and mix the two together. Yet when butter is made from good cream alone, prices will be so much better that the whole industry will profit far beyond the cost of extra care in production. That is a fundamental point brought out by the convention, though it is not at all new.

Fitness of Tulare.—The standing of Tulare as a dairy section ought perhaps to have preceded the above illustration of convention feeling, but deserves mention at any time. The hospitality of Tulare and its good citizens cannot be spoken of too highly, but Tulare also admirably illustrates good dairying all along the line. The town itself is made by dairying, which vastly preponderates over all other lines of agriculture in the district. It is an old town and yet a new town. The vicinity and the town was in a rut until dairying started with a rush a few years ago. Now the town is busy, clean, attractive, prosperous, and aggressively progressive. The standard of dairy stock is high, the standard of cleanliness and efficiency in dairying breeding unexcelled any place in California, and the amount of dairy produce shipped out is great. Nearly $100,000 comes to the town every month for butter, sweet cream or some form of dairy produce. Not only is the reputation of Tulare butter high, as shown by the prices secured, but the sweet cream business is very large, and that is essentially a product of high-class dairies.

Tulare is the headquarters of nearly every kind of dairy organization. It has the Tulare Dairy Association, probably the first county dairy association formed in California. It also has a very prosperous cow-testing association. This has between 800 and 900 cows under test and so many dairymen wanting to get in that at the beginning of next year probably two testers will be employed and about double the number of cows tested. Tulare has also one of the most noted co-operative creameries in California, the Dairymen's Co-operative Creamery, whose manager, J. P. Murphy, was in a way the host of the convention, as he, as president of the Creamery Operators' Association, alternated with J. W. Guiberson, of Corcoran, president of the Dairymen's Association, as the presiding officer.

The district is also the home of some fine pure-bred herds, and Tulare county has the credit of having two county dairy inspectors to aid in dairy methods and see that non-progressive dairymen are made to "toe the mark," these inspectors working with the State Dairy Bureau. Of course, the whole county deserves the credit of this, but Tulare city and district get a big slice of that credit. The convention certainly was in a dairy atmosphere.

The program, by the way, was essentially a dairyman's program, though of vital interest to creamery operators and managers also.

Business Accomplished.—The most important point of the new program is probably that Modesto is to have the next convention, and if it is anything like this one, lots of dairymen ought to be around. And Modesto has the facilities, ability and intention to make that convention a dandy. An outstanding feature is to be a dairy show, for Modesto, besides being the county seat of the greatest butterfat producing county in California, is the leading pure-bred dairy stock section also.

The new president of the C. C. O. A. is A. R. Bates, whose headquarters is Modesto. Other officers are: F. H. Daniels, of Alameda, vice-president; A. P. Ferguson, of Turlock, secretary-treasurer; and W. H. Rousell and W. H. Saylor, of San Francisco, and B. Baciarini, of Suisun, the executive committee.

For the dairymen, J. W. Guiberson, of Corcoran, was again made president; Bernard Crowley, of Ferndale, vice-president; S. A. W. Carver, of Los Angeles, secretary-treasurer, and directors: S. O. Walker, J. H. Davidson, Jas. W. McAllister, Fred Harvey, Guy H. Miller, and W. H. Saylor.

The butter contest, always a feature of the conventions, was doubly a feature for the marvelous scores made. The leading ones from sixteen entries were:

Buttermaker.	Creamery.	Location.	Score.
P. M. Becker	Grizzly Bluff	Grizzly Bluff	96½
Hans Beck	Danish	Fresno	96
Peter Peterson	Sunset	Loleta	95¾
W. H. Gilbert	Dairy Delivery	Gustine	94
V. Baciarini	Suisun	Suisun	93½
G. H. Nielson	Kern County	Bakersfield	93¼
John Clausen	Riverdale Co-op	Riverdale	93
L. Christiansen	Sierra	Madera	92½
John Petersen	Visalia Co-op	Visalia	92½

In the butter-scoring contest Hans Beck walked off with the first honors, show-

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, California.

KING LANCASTER, Son of King Edward, only three-time Grand Champion at California State Fair.

Breeder of

SHORT-HORN CATTLE
SHROPSHIRE and
MERINO SHEEP

Have for sale some choice range-raised bulls sired by King Lancaster, Knights Perfection and Bapton Broadhooks III. Single or car-load lots.

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McLAUGHLIN PERCHERON CO.,
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Shire Horses

When you buy a stallion, buy a good one. An inferior stallion is dear at any price. High-class stallions and mares always for sale.

HENRY WHEATLEY,
NAPA, CAL.

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We still have some excellent Shorthorn Bulls, just ready for the range. Write for prices.

HOPLAND STOCK FARM, HOPLAND, CAL.

1st Prize Ram Lamb, Omaha, 1911

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

FIRST CLASS DAIRY COWS FOR SALE

The Vina Dairy, owned by the Stanford University, have decided to dispose of some of their non-registered stock in order to make room for, and give better attantion to, their large herd of registered Holsteins.

If you are interested in good Holstein types and heavy producers, call or write to the VINA RANCH, Vina, Cal.

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OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

Caustic Balsam

IT HAS NO EQUAL

For the Human Body —It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Diphtheria, Sore Lungs, Rheumatism and all Stiff Joints

REMOVES THE SORENESS--STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

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Calves Without Milk

Cost less than half as much as the milk raised calves. Increase your profits by using

Blatchford's Calf Meal

The perfect milk substitute—Best since 1890. Ask for free book, "How to Raise Calves without milk." Your name and address on a postal is enough.

COULSON CO.
Petaluma
Cal.

JACKSON DEEP WELL TURBINE PUMP

is the most efficient pump of this type on the market and the simplest in construction. Every JACKSON pump means the best possible pumping economy.

The JACKSON is a pump of the highest service giving quality; it's just the pump you need on your farm.

Bulletin No 47-C on request.

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Los Angeles: 212 N. Los Angeles St.
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Deep Well Vertical Motor Driven Turbine Pump

Stump Pullers

California Stump Puller Company

704 Bryant St., San Francisco

ing that he not only knew how to make good butter, but knew good butter when he saw it, too.

These scores show that no locality has a monopoly on good butter. They also show some buttermakers that know their business and that the dairymen who supply cream from which the butter is made produce the kind of cream that makes the kind of butter that brings a premium in the market, hence that should get top prices and make dairying profitable.

RESOLUTIONS AND OPINIONS. — Space would not permit to give even a brief outline of important points brought up. All that can here be given is the attitude of the dairy interests on important matters as shown by resolution and discussion.

There was, in the first place, a very strong feeling about legislative matters. The industry cannot progress fitly with conflicting legislation and regulation by various cities receiving milk and cream from the same district. An essential point is uniform and sensible laws, and the indignation over the veto of the dairy bills after an overwhelming endorsement in Senate and Assembly had been secured has not died a particle. The organization is strong and feeling is strong that in every matter the dairy interests must be given support by the government.

In this line there is a widespread approval of the work and methods of the State Dairy Bureau and the feeling that a great increase in inspectors must be given before the dairy industry can have its due. The Bureau itself has not asked for special increase in appropriation, but the dairymen want an increase in funds and in scope of work.

Special effort is to be made to get funds from the State to publish the proceedings of the convention, which the State publishes for the State Fruit Growers' convention and gives out free to fruit growers. The dairymen and creamerymen, at their own expense, are going to get out verbatim records, in booklet form, of the proceedings of this convention, which will be sold for five cents each. Dairymen should ask their creameries for copies. In the future the State should get these out.

The Governor was also called upon to fill two of the three vacant positions on the State Board of Agriculture with dairymen.

Another very vital thing is the Panama-Pacific International Exposition. Unless steps are taken, although there will be a fine dairy and stock show, the dairy manufacture and products will be put here and there all over the grounds, or in several buildings. There is an opportunity to get a dairy manufacture and dairy products building adjoining the dairy exhibit, so that visitors will see first the cattle, then methods of manufacture of all dairy products, then the finished product in complete and striking sequence. This is a thing that has to be done, and committees of dairymen, creamerymen, and creamery managers have the subject in hand.

Of similar import is the resolution that county displays in all places must put dairying in a prominent position, that dairying must no more be ignored by having the whole display horticultural and agricultural products, but must be given the position that it deserves.

Perhaps a number of interesting points developed in the convention can be discussed later, but they can't be now. The spirit of the whole thing was: everybody get together to boost the industry, better products, better stock, better methods, better prices, and, above all things, more recognition for the dairymen by the State Government and in every other way.

We're all together, and we're all boosting, and we're going to get it. Get in and boost, too!

Hauls on any Road

You can't build roads to suit your horses, or your tractor, but you can get a tractor which is able to traverse roads of all descriptions—wet or dry, slippery, soft or hard, sandy, ashy or hilly. The

CATERPILLAR

Reg. U.S. Pat. Off.

Tractor will go anywhere—any place—any time of the year, because it has sufficient traction surface—a quality lacking in round wheel tractors.

Look at the illustration. You will see that the Holt Caterpillar is built entirely on different lines. It lays its own track, rolls over it and picks it up again. It has eight times more traction surface than the round wheel tractor. The round wheel tractor to have the same gripping power on the road would have to use drive wheels 160 feet high.

Built in two sizes 60 H. P. and 30 H. P. Its power is the cheapest known. It burns all the cheaper grades of distillate. Distillate is cheaper than kerosene.

Please send catalogue R. P.

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Address _____

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THE HOLT MANUFACTURING COMPANY
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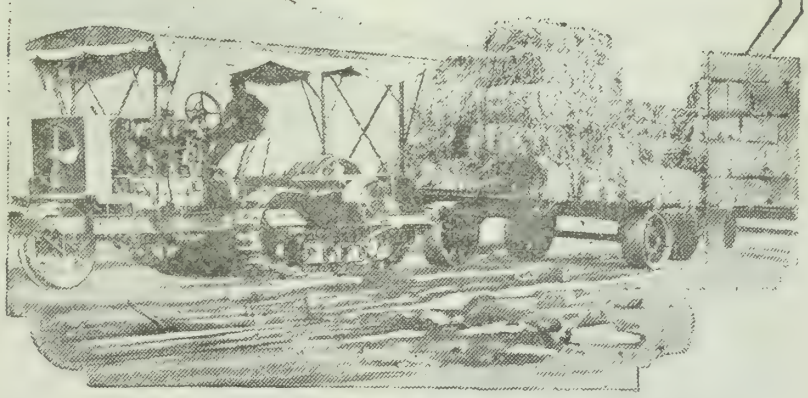

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EUREKA HARNESS OIL

Used everywhere, and everywhere known as the best.

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Forkner Orchard Cultivator

Does more work with less draft and leaves a better surface mulch than any other cultivator made.

It Works Right Up To Your Trees

Cultivating the entire surface beneath low branches without disturbing boughs or fruit. Write for catalogue and free book "Modern Orchard Tillage"

LIGHT DRAFT HARROW CO., 623 Nevada Street, Marshalltown, Iowa

Put Alfalfa in Right.

(Continued From Last Issue.)

The contour intervals, that is, the amount of fall allowed between one contour line and the next, should not be too great. Three to four inches fall between contours is a good distance. With this interval levees seven or eight inches high on their upper sides and ten to twelve on the lower will be ample to retain the water with safety, and such levees, if made eight or ten feet wide at the base, offer no serious impediment to cutting and hauling the hay. In no case should the contour interval exceed twelve inches. If the land slopes so much that twelve inch contours are insufficient with the levees fifty feet apart, that is, if it slopes more than two feet in a hundred, it is not adapted to contour checking, and some other method of applying water should be chosen. Contour intervals of more than a foot call for too much grading of land and the making of levees too high for convenience. High levees interfere with the cutting, raking and hauling of the crop, and besides are more liable to washouts, especially if made narrow in proportion to their height, as is too often the case.

If the checks as bounded by the contour lines and by the edges of the field are too large to irrigate conveniently they are subdivided by cross levees. After all the checks are laid out, field ditches are located in such a manner that, as far as possible, each check may be watered directly from a ditch. Levees are then built on the contour and subdivision lines. The earth for them is obtained by scraping off the surface of the high sides of the checks and of other high places in them, so as to leave the floor of each check as nearly level as is practicable. When the levees are completed, if the floor of a check is still uneven it is leveled by scraping off the high places and dumping on the low ones. Water is then admitted to the checks and speedily shows any high or low spots that remain. These should be noted and leveled as soon as the ground is dry enough. Thorough leveling is important to secure uniform irrigation.

LEVELING CONTOUR CHECKS.

Whatever style of checking be adopted, whether square, contour or strip checks, or any modification of the three, the proper leveling of the floor of each check is a matter of great importance. Unless this leveling is accurately done, it is very difficult, and sometimes impossible to secure even irrigation of the land. This is especially true of strip checks.

In the case of contour checks and square checks the presence of high spots it not quite so detrimental, because they can be irrigated fairly well (the high spots, that is) by simply continuing to fill up the check with water until all the high spots are covered. By this means, unless the high spots are higher than the levees themselves, they can be irrigated more or less satisfactorily, though at the expense of some waste of water. In order to avoid waste of water and at the time to get an even, uniform irrigation of every part of the land, all square and contour checks should be leveled off until the entire surface within each check is on the same level. Each check must be treated by itself and leveled like a floor. Then when the water is turned into such a check it will stand at the same depth over the entire surface, and consequently every portion of the check will receive the same quantity of water, with the desirable result of uniform growth of the crop. In well constructed checks of these types the filling of the check with water to the desired depth will bring the water well up on the levees, thus irrigating adequately the alfalfa on the levees, so that growth of the crop is uniform all over the field. Such a well leveled field of alfalfa it is a pleasure to irrigate, while the even, vigorous growth of the crop, due to the uniform irrigation, is a joy to the heart of its owner.

(To Be Continued.)

BURNER FOR DODDER.

The question has recently come up as to the best method of killing dodder, or love vine, in alfalfa. This parasite has to be killed some way or other, by plowing the alfalfa under if by no other means, and it is a problem with some men how to do it.

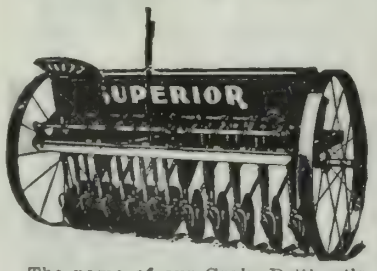
Practically speaking, burning it to the ground is about the only satisfactory way of working and the best piece of apparatus to use for this is a burner such as painters use to burn old paint off the side of a house. This sends a stream of flame out to one side when air is pumped through and burns everything it touches. The burner can be held like a pitcher, and a person can quickly and at small expense for gasoline walk around a field infested with dodder and burn off all patches of it.

The Cain ranch near Oroville, comprising 1,500 acres, has been sold to the North California Real Estate Co., which will develop water and place it upon the market in small parcels.

Two Prize Winners
We Sell Them Both

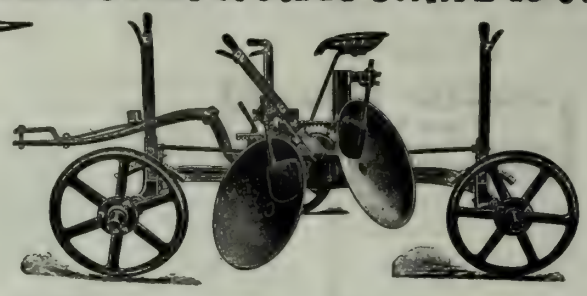
California Hydraulic Engineering & Supply Co.
68 FREMONT STREET
SAN FRANCISCO

The "Superior"



The name of our Grain Drill tells the story—"SUPERIOR." Furnished with 6 or 7 inch spacing.
Do not forget our
SPECIAL ALFALFA DRILLS.
20 discs 4 inches apart.
Write for prices and catalog.
THE H. C. SHAW COMPANY
Stockton, Cal.
WHOLESALE DISTRIBUTORS.

Mathews Reversible Twin Disc Plow

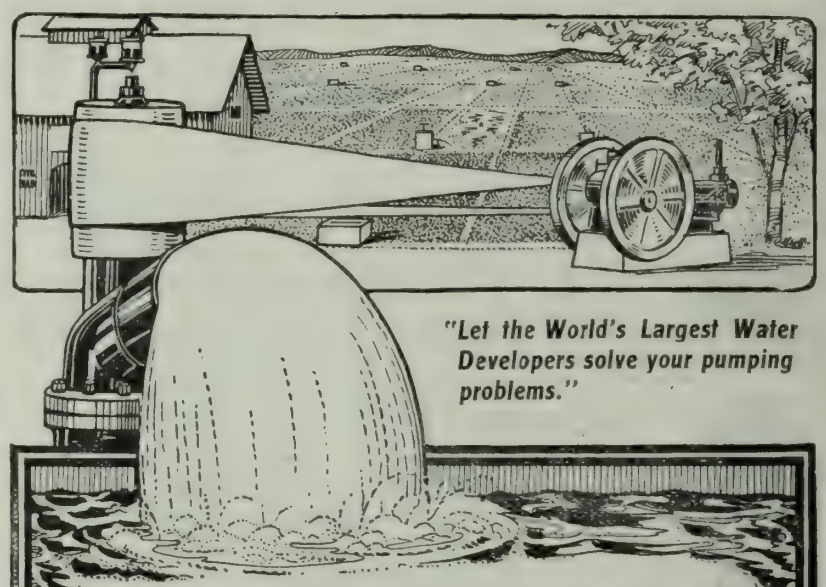


THIS is the only reversible disc plow which does not use segments to fix the position of the disc, and is therefore the only one which will always plow the same width of furrow both ways on level land and hillsides—**and stick to the work on hillsides.**

It leaves no water furrows. Discs are fixed in exactly the same working position every time the plow is lowered. Two discs wear twice as long as one—but cost you no more.

We are general agents for a complete line of Disc plows. Glad to tell you about them at any time.

NEWELL MATHEWS COMPANY
Established 1886
LOS ANGELES — California — STOCKTON



"Let the World's Largest Water Developers solve your pumping problems."

What Are Your Pumping Difficulties?

Are you having difficulties with your present pumping system? Are you getting only part of the water your well should produce? Is the expense of operation eating up the profits? Is your pump continually out of order, almost always needing some kind of repairs? With the old-style pumping system you are bound to have trouble of this sort, more or less.

The Layne & Bowler System

is the final choice of the up-to-date modern pump user. It has eliminated all his difficulties, and has given him efficient, continual service the entire year at less cost of operation. The Layne & Bowler pumps are simply constructed—no rods, valves, plungers or cup leathers, and they need hardly any attention. They are built to meet the conditions under which they must work.

The Layne & Bowler System is recommended by the best engineers and irrigators as the most economical and durable system now in operation. It's the system that will meet your requirements, overcome your difficulties, increase your water supply and do it all at less cost of operation. Write our expert pumping engineers and let them advise you free.

Write today for Catalog No. 25, which tells all about the Layne & Bowler System and its many successful users.

LAYNE & BOWLER CORPORATION
900-910 Santa Fe Avenue, Los Angeles, California
San Francisco Office, 508 Kohl Bldg.

BEAD-MILLER CO.

The Science of Feeding.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

This is a scientific age, and those who will not move on with it must be content to be left behind. What our fathers did was all right in their time, but we have moved up a peg in evolution and come to that stage where things must be done different.

In the staple grains, wheat is recognized as the best for egg production, but there is a difference even in wheat. The hard wheats have a much higher nitrogen content than the soft wheats, which are more starchy. And a hard wheat with a high glutten is a far better egg producer than a soft starchy wheat. I have noticed when the feed dealer has not had any hard wheat on hand and filled my order with a soft wheat that eggs have dropped off in just a day or two. And Petaluma poultrymen found the same trouble whenever they had to use soft wheat. So if this is a fact, and my experience and others prove that it is, if we feed scientifically we shall use hard wheat for laying hens and young chicks that are growing muscle and soft starchy wheats when we want to fatten hens for market. But if hard wheat is not obtainable the next best thing is to bake it in the oven until brown. Of course, large breeders can not very well do this, but small ones can; I have done it for years in winter and always with success.

HANDLE THE HENS.— To feed a lot of hens and never handle them is not wise because you do not really know whether they need more feed or less. Too much flesh means a poor egg supply, even with the heavy breeds, but if a hen feels firm when you grasp her by the keel she is all right. If the flesh is soft and flabby she should be made to exercise for what she has.

When hens are well over the molt and still do not lay the breeder should take pains to find out what is the reason. Perhaps a little extra animal food will make the desired change or a little more green feed.

Oats both ground and whole are good egg producers and while the fibre is more than in wheat it is a good winter feed, as there is more fat in oats than in wheat.

Wheat bran is a good egg producer but whole ground wheat is better because it is never ground so fine, but that it requires some work for the gizzard. Bran contains a good deal of mineral, and if good bran can be bought the rough feed can be ground barley and in a mixture of barley and wheat bran, ground oats, alfalfa meal and beef scraps we have one of the finest mashes for both eggs and tissue building.

MINERAL SALTS.—The mineral salts are a very important item in egg production, all grains contain some mineral salts, but it comes in almost a free state in green feeds especially in those having a leaf and stalk, such as alfalfa, rape, kale, and swiss chard. Feed all the green feed laying hens will eat and if they have enough other elements to balance the ration the eggs will come.

FEEDING FOR FLESH.—As nearly everybody has a few fowls they want to fatten either for their own table or market, it is just as well to fatten them so that the meat will be both palatable and digestible. I know most people think they have a nice table fowl when they pick up a fowl on range, and when the good wife opens the bird she finds fat in chunks. Yes, that fowl was certainly fat, in spots, but some of the flesh was dry enough to choke you, and still the folks could not tell why. Well the trouble was that the fowl had been making muscle, not flesh, and if that same fowl had been confined those chunks of fat would have been distributed among the fleshy tissues and have made a real soft palatable dinner.

Any man can make a fattening coop, the bottom should be of slats and the feed trough outside, so that only their heads can get into it.

If milk can be had, even buttermilk, it will pay to feed it to this fattening pen. Mixed with ground oats, corn meal, red dog flour or even shorts, about two or three weeks will put more good eatable flesh on a chicken than can be put on them in three months if allowed to run and take leg exercise. Or boiled potatoes and vegetables of any kind may be cooked and mixed with corn meal or shorts and the last week a little tallow or grease of any kind will help.

One of our subscribers asked for a description of Rhode Island Reds. Somehow that letter has come up missing, but as I remember the text of it although the name slips my memory, the inquirer will know that it is an answer to his question.

RHODE ISLAND REDS.—The standard weight of cock is 8½ pounds; cockerel 7½ pounds; hen 6½ pounds; pullet 5 pounds.

DISQUALIFICATIONS. — Earlobes more than one-half positive white; one or more entirely white feathers showing in the outer plumage; shanks and feet other than yellow or reddish horn. Besides these the exhibitor must look out for general disqualifications which apply to all breeds or varieties. Among these are feathers or stubs on clean legged varieties, side sprigs on comb, squirrel tail shafting in feathers and wry tail or lopped comb. Go over each bird several times looking for these defects.

POULTRY PRODUCTS TO REDUCE COST OF LIVING.

Mr. T. E. Quisenbury, comes out in the American Poultry World with the statement that the poultry business is certain to grow. He says, "The other producers of the Nation will have to hustle if they keep pace with the American hen. The receipt of the meat animals at the five leading live stock markets, including Chicago, St. Louis, Kansas City, Omaha and St. Joseph showed a falling off the first six months of 1912 of over six hundred million pounds compared with the receipts of these places during the first six months of the previous year. The same was true of the first six months of 1913 as compared with 1912. The number of meat animals being marketed is rapidly on the decrease.

"In the face of our rapidly increasing population, our cities increasing three times as rapidly as our rural districts, where can we find anything better suited as a substitute for meat animals than poultry and eggs? More poultry and eggs are being consumed every day. There is a greater demand for poultry products than ever before. You need not fear an over production of poultry products. The price of all products has more than doubled in the past ten years. These facts convince us that the poultry business is and must continue to be prosperous and also that raising poultry on the farm is a source of profit. We should feel proud that we are associated with a business that is becoming so important and making such rapid gains in every State of the Union."

On the feeding question Mr. Quisenbury has this to say, "The feeding question is one of those which is yet unsolved. Scarcely two Agricultural Colleges or Experiment Stations recommend the same thing exactly: the same formula for feeding baby chicks, growing stock, laying hens or breeding stock. Scarcely two farmers, scarcely two egg farms, or scarcely two fanciers feed exactly alike. The fact that each community has feeds which are easily and economically produced or purchased in that community, and which cannot be bought or raised in other sections; and the fact that the needs of each individual flock vary somewhat from every other flock or even individuals in the same flock, some strong and some weak, some feather, some inclined to be too fat and some too lean, and some just in good flesh makes it indeed a difficult matter to determine or recommend one certain food."

To most of this we can fully agree, still there are certain feeds that most of us can buy that are good for all fowls. Everyone should, so far as is practicable, separate the strong from the weak, all pullets should be kept separate from older hens, because they require more food than fully matured hens, but if kept in one yard the hens get the lion's share every time. But the best way is to feed according to the breed we keep and for the purpose we have in view. Hens that are laying well will stand an awful lot of feed before spoiling, while hens that are laying but moderately are easily made so fat that they cannot lay.

POULTRY SHOWS.

The poultry show season is just beginning for the year 1913, and it is expected that the following named shows will receive the support of every lover of good birds:

Santa Cruz, Nov. 15 to 18, Santa Cruz County Poultry Association; E. J. Harran, secretary.

Stockton, Nov. 19 to 22, San Joaquin Poultry Association; W. MacKay, secretary.

Oakland, Nov. 25 to 30, Alameda County Poultry Association; C. G. Hinds, secretary, 535 43d St., Oakland.

San Mateo, Dec. 4 to 7, San Mateo Country Poultry Association; Arthur R. Schroeder, secretary, San Gregorio.

Fresno, Dec. 3 to 6, Fresno Poultry, Pigeon and Pet Stock Association; Russel Uhler, secretary.

Visalia, Dec. 4 to 13, Tulare County Poultry and Pet Stock Association; Carl Futrell, secretary, Visalia.

Petaluma, Dec. 10 to 13, Petaluma Fanciers' Association; Thomas McGuire, secretary.

Portland, Oregon, Dec. 1 to 6, Oregon Poultry and Pet Stock Association; W. L. Fulmer, secretary, Portland.

Pasadena, Dec. 10 to 13, Pasadena Poultry Association; J. M. Wright, secretary, R. D. 2, Pasadena.

San Francisco, Dec. 31 to Jan. 4, San Francisco Poultry, Pigeon and Pet Stock Association; W. H. Ingram, secretary, 2252 Hopkins St., Fruitvale.

Tacoma, Wash., Dec. 10 to Jan. 4, 1914, Tacoma Poultry Association; W. Shepherd, secretary, Summer, Wash.

Los Angeles, Jan. 6 to 13, 1914, Poultry Breeders' Association of Southern California; Jos. E. Davis, secretary, Los Angeles.

ASHES AND HEN MANURE.

To the Editor: I sprinkle ashes on the floor of my hen house to make it easier for cleaning. Does the mixing of ashes with the hen manure deteriorate or in any way change the value of the manure as a fertilizer?—M. D. K., Napa.

There is more or less lime and carbonate of potassium in wood ashes that will drive off some ammonia from the manure. Gypsum is one of the best materials to use as a cleanser, which is evidently the reason you use ashes, and has no ill effect. Fresh sand or light soil is also satisfactory. Coal ashes can be used as their injurious effect upon manure will be almost nothing.

POULTRY.

FINE ORPINGTON COCKERELS — Buff and White; eggs for hatching in December. Write Mrs. Susan Swaysgood, R. 2, Pomona, Cal.

BUFF ORPINGTON EGGS, $1.50 setting; $6.00 per 100; also $3.00 setting. Indian Runner duck eggs, 75c. doz. Glendale Farm, R. 2, Box 51, San Jose, Cal.

S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Sults, 378 Bandini Ave., Riverside, Cal.

CHICKENS, DUCKS, GEESE, GUINEAS, Pea fowl. Address Wm. A. French, 545 W. Park St., Stockton, Cal.

BRONZE Turkeys and Eggs. Ed Hart, Clement, Cal. Large size, good plumage, early maturity.

FEED CROLEY'S INFANT CHICK FEED. Raises more healthy chicks than all the other feeds combined. Manufactured by the GEO. H. CROLEY CO., Inc., 631-637 Brannan St., San Francisco.

PENNANT STRAIN

BARRED and BUFF PLYMOUTH ROCKS.

A few choice cockerels and pullets left. Eggs for hatching after January 1st.

JAS. M. MONTGOMERY,
4360 Fleming Ave., Oakland, Cal.

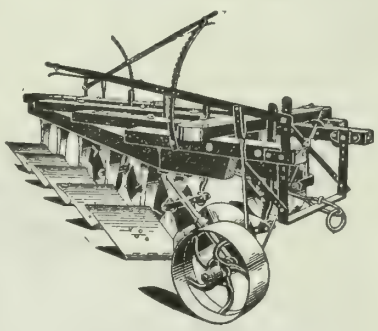
MOLTING HENS

require a good tonic and conditioner to keep them in health and get them laying again quickly.

COULSON'S No. 3 CONDITION POWDER will do it.

Write for particulars and special delivered price.

COULSON CO.,
Petaluma, Cal.



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HORSE OR TRACTION GANG PLOWS.
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Write for Prices and Catalog.
THE H. C. SHAW COMPANY
Stockton, Cal.

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Good neighbors—healthful climate—splendid markets.

Low prices—easy terms.

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593 Market St., San Francisco.

The Home Circle.

How a Pumpkin Helped Johnnie to be Thankful.

Johnnie spent the summer at grandma's. One day she put into his hand a smooth, yellow seed. "Inside of this is a wonderful little plant," she said. "Put it in the ground and see what will happen."

Grandpa showed Johnnie how to make a hill between two stalks of field corn; and in the middle he dug a little hole, laid in the smooth, yellow seed, and covered it up. Every night, when the sun went down, he carefully watered that hill. How he longed to know what was going on inside.

Drip, drip, fell the water upon the ground; the walls of the seed became soft and swelled out; the little plant grew so large and strong that it burst through the shell out into the rich black earth.

The baby plant climbed up, up, till it reached the beautiful world above. Then it spread its green leaves and basked in the sunshine, sending out more green leaves on a long stem, which grandma called a vine. This stem had curious little tendrils like fingers, that reached over and caught hold of one of the cornstalks and held fast, so the stormy winds might not tear it to pieces. The vine was so full of big, fussy leaves that the ground was quite shaded with them.

One day Johnnie found a tiny green ball hanging to the stem under one of the largest leaves, and, long before the summer was over, the green ball had grown to be as large as one of grandma's milk-pans. The cool September wind tossed aside the sheltering leaves, the warm sun shone upon the ball, and soon it became the finest, round, fat, yellow pumpkin you ever saw.

The holidays were over, and Johnnie must go back to the city and go to school. He did not like to leave the country; but grandma said, "You shall make us another visit on Thanksgiving Day, and help eat that big pumpkin when it is made into pies. I'm sure it will taste better because you planted the seed and watched it grow."

One week before Thanksgiving, Johnnie was taken sick with the measles. No frolic in the country for him! What a pity! Grandpa and grandma thought so, too. They put their heads together and made up something lovely—Johnnie could not come to the pumpkin, so the pumpkin must go to him; and it did, in a box lined with straw.

Johnnie was sitting in his bedroom in a big armchair, and he was not feeling very happy.

"'There's a good time coming,'" sang a cheery voice in the hall, and up came father with a heavy box. He put it on the floor in front of his discontented little boy, and, when he took the lid off, Johnnie laughed long and loud.

Such a pumpkin! Grandpa had cut off some of the hard, yellow outside, making two big round eyes. These he painted blue with grandma's indigo. There was a flat nose, and such a grinning mouth with white watermelon-seed teeth! Then it had long corn-silk hair and a funny plaited cornhusk cap. On the tassel was tied a paper with these words printed in large letters,—

"TAKE OFF MY HAT."

With the hat came the upper part of this queer pumpkin's head. "The stuffing," as Johnnie called it, had been scooped out, the inside lined with thick wrapping paper and packed with such strange parcels!

First, came a turkey, cut out of a sweet potato, with a real feather tail; then a pig made from a turnip, a glass of clear honey gathered by grandma's bees, some crabapple jelly, a bag or glossy brown chestnuts, four yellow pippins, and six ears of pop-corn.

Mother put some of the corn in a wire popper and held it over the open grate, so Johnnie could see the tiny kernels swell and burst into feathery white fairies that danced and hopped about in a most comical fashion. When Johnnie went to bed, father turned the gas very low, and, taking the paper from the inside of the pumpkin, he lighted a bit of wax candle and set it in the bottom of the head.

"Jack-o'-Lantern," cried Johnnie in delight; and, as long as it was possible to keep his eyes open, he looked at that funny laughing face. It was a lovely Thanksgiving after all, and by and by, when he slipped off to Slumberland, he dreamed he was a round, yellow pumpkin and grandma was trying to cut a mouth in his face.—Adapted from "The Favorite," for the Kindergarten Review.

Farm Machinery Efficiency.

[Written for the PACIFIC RURAL PRESS.]

Someone has said that paint covers a multitude of sins and while that may be true in many instances it also stops a multitude of sins when properly used on farm machinery.

California farmers have a habit of using all of the more advanced farm cachinery, yet many seem to think that with our mild winters there is very little need of protection through paint.

The result is what might be expected for one seldom finds anyone who gets the most efficient wear out of this investment.

In the fall of the year after the summer work is finished and before the heavy rains set in is a good time to look after this job for if one waits until spring other rush jobs are apt to push it to one side.

No great amount of painting experience is necessary in performing the work and

Ghirardelli's Ground Chocolate

Use it for many purposes.

As a flavoring for puddings, ice cream, candy, cake, iceing and sauces, Ghirardelli's Ground Chocolate is unequaled for its delicate and pleasing flavor. And as a health beverage it is in a class by itself. So simple to prepare, so economical—so many practical ways to serve and use this beverage food product.

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A sample can mailed free for the asking, will convince you of its quality.

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Wherever there are children in the home the comfort of the

PERFECTION SMOKELESS OIL HEATER

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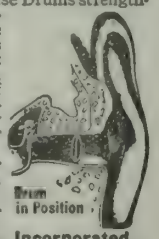
From All Causes, Head Noises and Other Ear Troubles Easily and Permanently Relieved!

Thousands who were formerly deaf, now hear distinctly every sound—even whispers do not escape them. Their life of loneliness has ended and all is now joy and sunshine. The impaired or lacking portions of their ear drums have been reinforced by simple little devices, scientifically constructed for that special purpose.

Wilson Common-Sense Ear Drums

often called "Little Wireless Phones for the Ears" are restoring perfect hearing in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc. No matter what the case or how long standing it is, testimonials received show marvelous results. Common-Sense Drums strengthen the nerves of the ears and concentrate the sound waves on one point of the natural drums, thus successfully restoring perfect hearing where medical skill even fails to help. They are made of a soft, sensitized material, comfortable and safe to wear. They are easily adjusted by the wearer and out of sight when worn.



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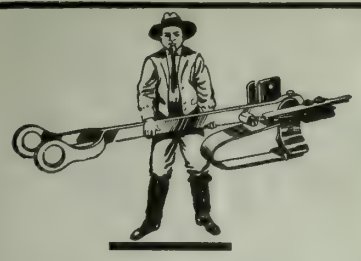

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If your 'phone has the Kellogg Hookswitch (long lever, heavy controlling spring, pure platinum contacts) you'll sure get connection every time.

The Kellogg Hookswitch

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The Kellogg Telephone, by reason of its dependable construction is sure to give you uniform, reliable ringing and talking service.

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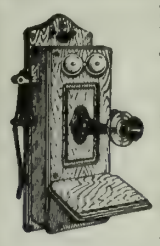

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WE PAY THE POSTAGE

"SA-SA-MA"	A high-grade uncolored Green Japan Tea.	60c per lb.
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"DALMOY BLEND"	The choicest Black Tea the world produces	75c " "

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This Coupon Entitles You to A Free Sample of
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NAME AND ADDRESS

the cost of material is astonishingly small.

All of the wooden parts should receive at least one coat of good lead and oil paint and more if the wood has become badly checked or cracked from exposure. The most essential part of such work is to have all dirt or grease thoroughly cleaned off first by scraping and then by cleaning with a rag soaked in gasoline.

No paint will dry if applied over grease, so care should be exercised to see that it is perfectly clean.

While all wood parts are injured by exposure, iron or other metals are also susceptible to injury and if allowed to go too long are rapidly destroyed through rust.

It is therefore proper to paint all metal parts, but in so doing white lead paint should not be used, but instead a red lead paint as that kind will adhere much better and last a great deal longer. A good mixture for this is dry red lead, linseed oil and either turpentine or Japan for dryers. In case rust has set in, the surface should first be sandpapered to remove any such layer as otherwise the paint will not be a preventative of further rust.

Keep farm implements painted except the plow shears and cultivator points which should receive a good greasing with lard after used and the yearly cost of new machinery will be much less than at present.

Two New Apple Recipes.

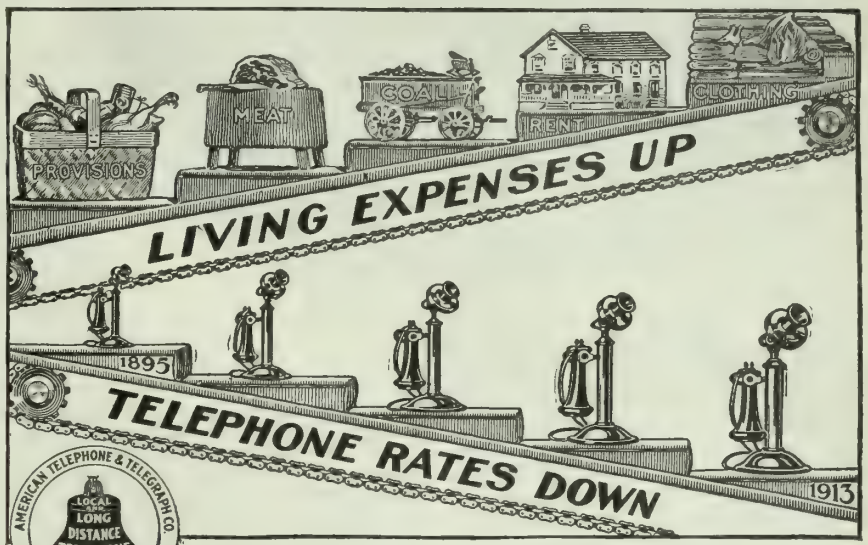
Miss A. B. Milam of the Domestic Science Department in the Oregon Agricultural College, submits two new methods of cooking apples which read as though they were good.

The first is called "Blushing Apples," as red apples are so treated that the color is transferred from the skin to the flesh. The second is called "Coddled Apples." The fruit is prepared as follows:

Blushing Apples.—Select eight red apples and cook in boiling water until soft, turning them often. Have water half surround apples. Remove skins carefully, so that the red color remains on the fruit, and arrange on serving dish. To the water add one cup of sugar, grated rind of one lemon and the juice of one orange; simmer until reduced to one cup. Cool, and pour over apples. Serve with whipped cream.

Coddled Apples.—Pare and core eight medium sized apples and cook in syrup made with three cups of water and one cup of sugar, turning frequently. Keep covered until almost completely cooked. Then remove cover and reduce syrup until it becomes very thick, continuing to turn apples occasionally. When cool fill centres of cooked apples with jelly or stewed prunes (with stones removed) and cover tops with whipped cream.

If a girl has suitors, plenty;
You can tell which one in twenty—
As you speak their names—impresses her the best;
When her cheek and brow grow florid
And she says, "Oh, he's just horrid!"
It is a proof she likes him better than the rest.



Economy of the Bell System

Consider this significant fact: While most of the necessaries of life have gone up, the price of telephone service, which is one of the essential factors in our commercial and social life, has moved steadily downward.

Although a pound of these necessities still contains but sixteen ounces, the telephone user has been getting more and more service for less money.

On the average, the people of this country pay 49% more today for food, fuel and clothing than they did in 1895. Since then, the decrease in the average rates for telephone service has been more than one-half.

At the same time, the efficiency and value of the service to the subscriber has vastly increased. Today he can talk to an average of five times as many persons in each exchange as he could eighteen years ago.

This is the inevitable result of the comprehensive policy of the Bell System, which brings together the associated Bell companies and the communities they serve.

Through the very size and efficiency of their organization they accomplish improvements and effect economies which give the greatest service at the lowest rates.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy *One System* *Universal Service*

Little Mildred, going to Sunday school, had been spoken to by her mother for being careless about her wearing apparel. Her mother tried to impress upon the child that she must always dress with scrupulous neatness. The following Sunday the teacher, in hearing the lesson, had occasion to mention that the "hearts of little children should always be purest and cleanest." Mildred had not been paying attention. The teacher suddenly said —"Mildred, what should be the purest and cleanest about a little child?" To the great astonishment of the teacher, Mildred replied quickly—"Your underclothes."

The new school teacher in a rural town gave a boy a question in compound proportion for home work one evening. It included the circumstance of "men working 10 hours a day to complete a certain work." The next morning the teacher, in looking over the little pack of exercises, found this boy's sum wholly unattempted. Calling him to her, she asked why he had not tried to do the sum. The boy, after considerable fumbling around in his pockets, brought forth a note from his father and handed it to her. Unfolding it, the teacher read:—"Miss—I refuse to let my boy do this sum you give him as it looks to me to a slur at 8-hour sistum enny sum not more than 8 hours he is welcum to do, but not more."

Mr. Rooter (As Grady takes a long slide to second).—"He's safe! He's safe! He's safe!"

Miss Newton (her first game).—"Oh, I'm so glad, I was sure he must be killed."

THE MARKETS.

San Francisco, Nov. 19, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Both local and Northern Club are quoted a little lower, but are fairly firm at the decline, while Northern Bluestem is higher. The Northern market is reported quiet, mill interests having covered their requirements for the present, though there is a very fair jobbing movement here.

California Club, ctl	$1.45	@1.47½
Forty-fold	1.50	@1.52½
Northern Club	1.45	@1.47½
Northern Bluestem	1.67½	@1.70
Northern Red	1.55	@1.70

BARLEY.

Continued rains and a steady improvement in crop outlook have had a depressing effect on the barley market, both for spot and futures. Both December and May options are lower, and the spot grain has also declined again, with little buying at present.

Brewing and Shipping	$1.37½	@1.42½
Choice Feed, per ctl	1.27½	@1.30
Common Feed	1.25	@1.27½

OATS.

Red seed oats are still moving off in good shape, and are fairly firm as quoted. The movement in other lines is moderate, and white are weak, with liberal supplies.

Red Feed	$1.65	@1.85
Seed	2.25	@2.30
Gray	Nominal	
White	1.50	@1.55
Black Seed	2.50	@3.00

CORN.

There is practically no California corn offering locally. The Eastern markets are dropping a little, causing a weaker feeling locally, though there has been no quotable decline.

California Yellow	Nominal	
Eastern Yellow	$1.85	@1.90
Eastern White	Nominal	

RYE.

Values are about the same as before, but are merely nominal, as there is none of this grain on hand at the moment. There is some demand for seed, but requirements are not very large.

Rye, per ctl	$1.45	@1.50
Seed	1.65	@1.70

BEANS.

Red kidneys and Mexican red beans have dropped off a little from the recent advance, while other lines stand as last quoted. The general situation is fairly satisfactory, as practically all descriptions are firm as to value and the movement keeps up in good shape, shipments so far having been comparatively large. The movement of limas is said to have been much larger than for the same period last year, and growers are beginning to hold out for higher prices.

(On wharf.)

Bayos, per ctl	$3.50	@3.60
Blackeyes	4.00	@4.25
Cranberry Beans	3.75	@4.00
Horse Beans	1.90	@2.10
Small Whites	4.75	@5.00
Large Whites	3.10	@3.25
Limas	5.00	@5.20
Pea	Nominal	
Pink	2.85	@3.00
Red Kidneys	4.25	@4.50
Mexican Red	3.75	@4.00

SEEDS.

There is a very good movement in some lines, and values are pretty well maintained, though no quotable advance has been noted for some time.

Alfalfa	12½	@15 c
Broomcorn seed, per ton	Nominal	
Brown Mustard, per lb		3¾c
Canary	7	@ 7½c
Hemp	2½	@ 3 c
Millet	2½	@ 2¾c
Timothy	7½	@ 8 c
Yellow Mustard	Nominal	

FLOUR.

There is little feature to the local trade, values showing little fluctuation, while the demand is keeping up on about the usual scale for this time of year.

Cal. Family Extras	$5.60	@6.00
Bakers' Extras	4.65	@5.20
Superfine	3.90	@4.10
Oregon and Washington		4.90

Hay and Feedstuffs.

HAY.

Shipments of hay to the local market have not increased much over last week, and there is no prospect of change in the immedate future, as market would hardly absorb any large offerings. The trade is, for the most part, fairly well stocked for the winter, and there is a feeling that the improved crop prospects will bring easier prices before long. Holders in the country are firm in their views, asking more than the local prices, and a fair country demand is expected as winter farming and development work progresses.

No. 1 Wheat, or Wheat and Oats	$16.00@17.00
do No. 2	14.00@16.00
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 80c

FEEDSTUFFS.

There is little new to report in this line, the demand being fair, but without much large buying. Bran is still weak, but not quotably lower.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	24.00@25.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	30.00@31.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	28.00@29.00
Rolled Oats	33.00@34.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Onions have again advanced quite sharply, as most of the remaining stock is in strong hands, and offerings are light. The amount of southern stock appearing is gradually increasing, though in most lines local stock is still offered. Supplies of off-grade local tomatoes are quite plentiful, and some sold down to 10c per box, though choice stock commanded good prices, and southern is held at about 75c per crate. Most of the cucumbers are also from the south. Lettuce is now coming in fairly well, and supplies of celery are increasing, while cabbage is still rather scarce. Mushrooms are plentiful, and ordinary wild stock has been offered as low as 5c per pound. String and lima beans and green peas are easy, with most offerings of poor quality.

Onions: New Yellow River, ctl.	$ 1.75	@ 2.00
Garlic, per lb	7	@ 9c
Cabbage, per ctl	1.25	@ 1.75
Cauliflower, dozen	40	@ 60c
Cucumbers, Southern, box	50	@ 75c
Green Peppers, box	25	@ 60c
Carrots, per sack	50	@ 75c
Green Peas, lb	3	@ 6c
String Beans, lb	2	@ 6c
Summer Squash, lug box	75c	@ 1.00
Okra, box		75c
Tomatoes, box	25	@ 75c
Eggplant, box	40c	@ 1.00
Lima Beans, lb	2	@ 5c
Sprouts, lb	3½	@ 6c
Celery, doz	25	@ 40c
Rhubarb, box	75c	@ 1.25
Mushrooms, lb	40	@ 50c
Lettuce, crate	65c	@ 1.00

POTATOES.

Several slight changes in quotations are noted, but the situation remains about as before, as supplies are moderate and for the most part firmly held. The cheap sweet potatoes have been pretty well cleaned up, and $1 is now the inside figure.

Salinas, ctl	$ 1.85	@ 2.00
New River Whites	85c	@ 1.10
Sweet Potatoes, per ctl	1.00	@ 1.25
Oregon Burbanks	1.25	@ 1.40

Dairy Produce.

POULTRY.

Arrivals of Eastern stock have been comparatively large, and with nothing unusual in the way of demand the market is weak on most descriptions, and extra hens are lower. Small broilers are an exception to the general weakness, as this class of stock is scarce and some recent arrivals have sold at a sharp advance. Receipts of dressed turkeys have been excessive, causing a drop in prices.

Large Broilers, per lb	20	@22 c
Small Broilers, per lb	28	@29 c
Fryers, per lb	18	@19 c
Hens, extra, per lb	17	@18 c
Hens, large, per lb	17	@18 c
Small Hens, per lb	14	@15 c
Old Roosters, per lb		12 c
Young Roosters, per lb	18	@20 c
Squabs, per doz	$ 1.50	@ 2.00
Geese, per pair	2.00	@ 3.00
Ducks, doz	4.50	@ 8.00
Turkeys, live, per lb	20	@21 c
do dressed	24	@26 c

It does the WORK with the least HELP

The James Oliver No. 11 Sulky will do more work and better work, with less exertion, than any other Sulky—because of many exclusive features found only on this particular plow.

The plow that meets the soil *more* than half way. Let us tell you why—we'll be glad of the chance.

Write for catalogue P, giving full description of this plow and complete line of Oliver plows, implements, etc.

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Make Your Own Olive Oil

WE CAN SUPPLY YOU WITH JUST THE OUTFIT YOU WANT, LARGE OR SMALL.

Write us,

California Press Mfg. Co.

409 6th Street San Francisco, Cal.

BUTTER.

The demand for local extra stock is coming out more strongly than for several weeks past, resulting in a steady upward movement of this grade through the past week. Firsts remain as last quoted.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	31	32	32	32½	33	34
Firsts	29	29	29	29	29	29

EGGS.

After some slight fluctuations, prices reached an extreme high level the first of the week, when a strong buying demand brought out very few offerings. The high prices, however, curtailed the demand for this grade, which is now lower. The call for storage stock and pullets is quite large and the latter are higher.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	56	54½	58	60½	58	57
Selected Pullets	41	43½	45	49	52	52

CHEESE.

Fancy flats continue very firm, with another advance of 1c this week. No change is noted in other lines.

Fancy California Flats, per lb	19 c
New Young Americas, fancy	17½c
Monterey or Jack Cheese	18 @19 c

Deciduous Fruit.

Business continues rather light in most lines. Good grapes find a fair deman, but supplies are very light, the bulk of the stock being in poor shape and selling at irregular prices. Local berries also make a poor appearance, and while arrivals are light there is no improvement in prices. Cranberries are coming in fairly well and find a good demand at the old figures. Apples are steady as to price, but the demand is very light at present. The Bartlett pears in storage are about cleaned up, and offerings now consist almost entirely of Winter Nelis. Persimmons are a little lower, but this fruit finds only a limited demand.

Strawberries, chest	$ 3.00	@ 6.00
Raspberries, chest	5.00	@ 6.00
Huckleberries, lb	5	@ 9c
Cranberries: Coos Bay, box	2.25	@ 2.50
Cape Cod, bbl	9.00	@ 9.50
Late Red	10.00	@11.50
Apples: Baldwins	1.15	@ 1.50
Spitzenbergs	1.10	@ 1.60
Greenings	1.00	@ 1.25
Bellefleur	1.25	@ 1.75
Newtown Pippins	1.15	@ 1.75
Common	50	@ 75c
Pears: Winter Nelis	1.00	@ 2.00
Grapes: Malaga, crate	65c	@ 1.00
Muscat	65	@ 90c
Black, lugs	65c	@ 1.25
Tokay, lugs	75c	@ 1.00
Cornichon, crate	65	@ 75c
Quinces, box	50c	@ 1.25
Pomegranates, box	50	@ 60c
Persimmons, box	75c	@ 1.00

Dried Fruits.

There is little of special interest to report in the dried fruit market at present, as business at this end has quieted down to the usual condition just before the holidays. There is considerable activity in a jobbing way, as the trade is preparing for holiday requirements; but the large distributors have pretty well covered their needs for the winter, and local packers report a very quiet market, with little prospect of revival until buyers come out for their spring stock. There is nothing new in prices, most lines being firmly held, and except for raisins and possibly peaches there is little left in first hands. The principal feature at present is the extreme firmness of prunes, in which some further advance may occur. It is said that there is not over 500 tons left in the Santa Clara district, with only about 50 tons around Napa, and aside from this most offerings are in the hands of a few packers, who are holding firmly. Stocks, moreover, are very light in the East, and there is an active jobbing demand. The upward movement of raisins continues, and the stock is moving off steadily, though buyers are keeping their purchases down rather closely. The New York Journal of Commerce says:

"While comparatively little interest is manifested in offerings of prunes for forward shipment from the coast either in

California or Oregon stock, the demand for spot goods continues active and is said to exceed the supply. Everything arriving is bought promptly, and there is little, if anything, left in store of either old or new crop. The tone of the market is decidedly strong, and the tendency of prices is upward, but no quotable change in prices is noted. The demand admits of no accumulation of suplies here, and the spot market is kept practically bare.

"In apricots and peaches for forward shipment there is little buying being done by the local trade, and in spot goods trade is on the hand-to-mouth order. But a steady feeling prevails, and prices are held close up to the quoted figures. California raisins seem to be getting little attention from the trade here either for immediate or future shipment. The market, however, is steady. A fair demand is reported for imported clusters and layers in anticipation of holiday requirements, and the general tone of the market is firm."

Evap. Apples, 1913	6½@ 8 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4½c
Black	2½@ 3½c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 @ 4½c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4¼c

Citrus Fruits

The new citrus season is starting off nicely. Shipments from north of the Tehachapi are going East rapidly and most of the oranges are commanding from $2 to $3 per box f.o.b. California. The crop in northern California is turning out to be large and the texture and size of the fruit is all than can be asked for. The output for Tulare county is estimated to be from 4500 to 5000 cars. There is practically no change in the lemon market and only a few cars are being shipped out these days.

The principal feature in the San Francisco market of late has been the arrival of new crop navel oranges. The demand for them has been only fair, and while some especially attractive lots have brought more than the quotations, ordinary stock does not move freely. The demand for other citrus goods is also rather light this week. With more liberal offerings, both lemons and limes are lower.

Oranges (per box):	
New Navels	$ 3.00@ 3.50
Valencias	3.00@ 6.00
Grapefruit, seedless	3.00@ 4.00
Lemons	3.00@ 6.00
Limes	4.00@ 5.00

Nuts, Honey, Hops, Etc.

NUTS.

There is little left unsold in the State, either of almonds or walnuts, and shipments are going forward rapidly. Jobbing business throughout the country is active, in preparation for the holiday trade.

Almonds, new crop:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

The local market remains quite firm at about the same range of prices as for some time past. New offerings are very light and find a ready demand.

Comb, white	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

The recent demand has cleaned up most of the stock offered in this market, and new arrivals are light, keeping prices on a firm basis.

Light	30 @32 c
Dark	28 @30 c

HOPS.

Several sales have been made recently at rather lower prices than prevailed a few weeks ago, though some growers around Santa Rosa are turning down offers of 24½c. Some of the leading hop men estimate that there is pretty certain to be a shortage, while European crops are light.

1913 crop	20@25c

Live Stock.

The principal feature is an advance of about ¼c in beef cattle, which has been expected for some time, as most California stockmen have been very firm in their views. Heavy hogs are slightly lower, with fairly good supplies, and dressed pork shows a sharp advance.

Steers: No. 1	7¼@ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼@ 6½c
No. 2	5¾@ 6 c
Bulls and Stags	2½@ 5 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	8 @ 8¼c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4¼@ 4½c
Ewes	3½@ 3¾c
Lambs: Suckling	5¾@ 6 c

DRESSED MEATS.

Steers	12 @12½c
Heifers	11 @11½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13½@14 c

WOOL.

The wool market remains featureless locally, with no trading of any consequence. Buyers are taking no interest in the market, and little effort is being made at present to clean up stock left in the country.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

Conditions remain about the same as for some time past, values being firmly held on the old basis, with very light offerings of country hides, though the demand is not especially large.

Heavy Steers, over 56 lbs	15½c
Medium	15 c
Light Steers, under 48 lbs.	15 c
Heavy Cows, over 50 lbs	15 c
Light Cows, 30 to 50 lbs	16 c
Kip	15 @16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	26 @27 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.75
Medium	2.25
Small	1.00
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

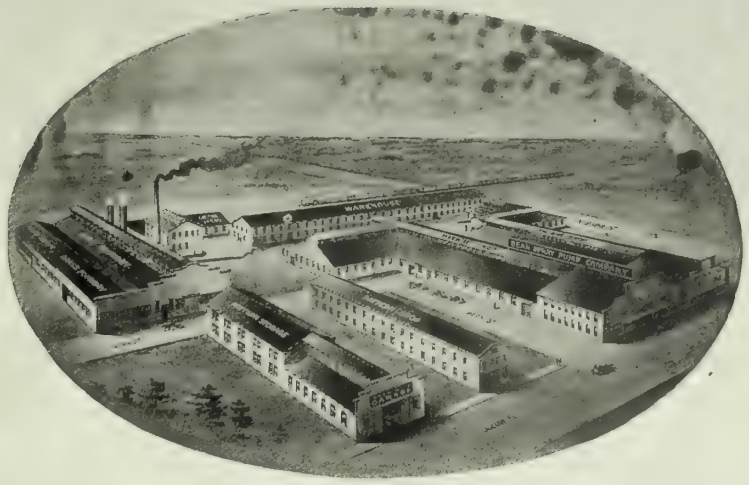
The improved outlook for feed, together with the desire to hasten winter operations in the country, has brought a somewhat better demand for most classes of stock in both local and outside markets. Offerings of really first-class heavy stock in this market have been limited for the last week or so, but general offerings find fairly ready sale, and animals of desirable types are bringing satisfactory prices.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	100@150
Wagon Horses, 1250 to 1350	100@125
Delivery Horses, 1050 to 1250	75@100
Desirable Farm Mares	60@ 80

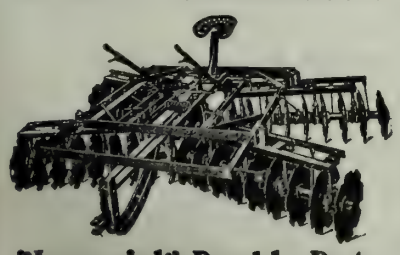
MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

Within a short time the Sonoma County Poultrymen's Federation will sell the eggs on the San Francisco market under the legally authorized brand of the Federation and a guarantee of quality. This method is expected to establish a demand for Sonoma county eggs at fancy prices.



One of the features of the annual convention to be held by the California Fruit Growers' Association in San Jose, December 2, 3, 4, will be a visit to the plant of the Bean Spray Pump Co. This is one of the largest and best equipped plants of the kind on the Pacific Coast and will be in full operation when the growers visit it. Visitors to the convention will be shown through the great brass and iron foundries as well as all other parts of the plant. The Bean Spray Pump Co. manufactures a complete line of hand and power sprayers as well as centrifugal pumps and gas engines and factory experts will be on hand to explain the various processes and to talk with growers who have spraying and irrigation problems to deal with. It will be well worth the time of any grower to attend the convention and visit this splendid plant.



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Strongly built, simple in construction, easily operated.
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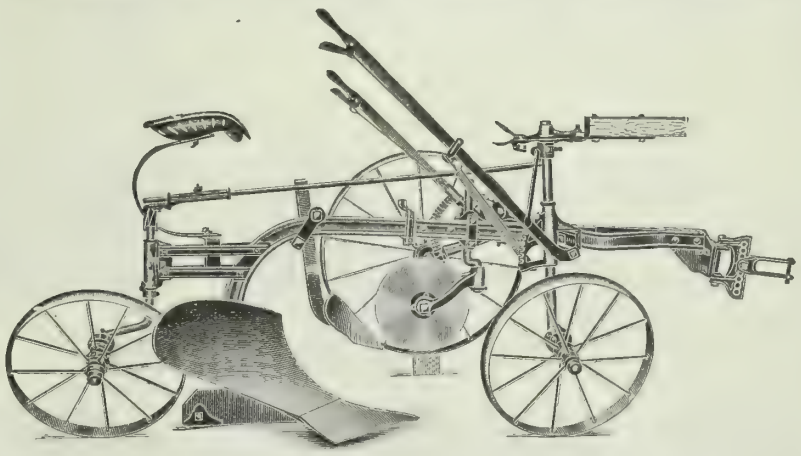
Stockton, Cal.
Wholesale Distributors.

John Deere Deep Tilling Stag Sulky



A Deep Seed Bed is often absolutely essential in successful crop production. This creates the need for a plow that will pulverize without bringing the subsoil to the surface.

The **John Deere** Deep Tilling Stag Sulky has a special shaped narrow throated bottom, and high, wide moldboard. Notice the jointer which runs just ahead of the bottom and starts the trash over into the furrow previously made.

There is a **John Deere Plow** for every variety of soil known to man, and the **Deep Tilling Stag** is one that you should know about.

A postal will bring "Deep Tillage," a beautifully illustrated folder about deep-tilling and sub-soiling.

JOHN DEERE PLOW COMPANY, San Francisco, Cal.

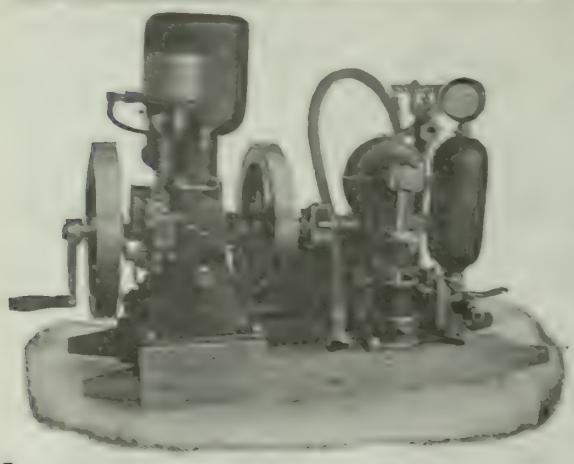
A WARNING TO THE PUBLIC

The Pacific Pipe Co.'s pipe has such a wide reputation for value that some dealers have been led to stultify themselves and mislead the public by trading on the popularity of no name. They obtain samples of our material in some indirect way and then make a flaring announcement to sell them at ridiculously low prices.
When you are offered pipe at ridiculously low prices by such dealers you'd better go slow.
The object may be to get you to figure on good material and then to deliver you an inferior pipe.
The safe way is to buy only from the Pacific Pipe Co.
We appreciate the confidence which the public feels in us and in our goods, and we make this announcement to enlighten you and to prevent deception.

PACIFIC PIPE CO., Main and Howard Sts., San Francisco.

TEN THOUSAND HEAD OF TURKEYS WANTED FOR THANKSGIVING

We want the farmers of California to raise ten thousand head of choice turkeys for our Thanksgiving trade. Last year we sold fancy dressed turkeys as high as 30 cents a pound. Commence now to get your turkeys ready for the Thanksgiving market. Have them as large and fat as possible. Write us immediately how many head you will have ready for sale at this time, as we want to keep in touch with you from now on until after Thanksgiving and Christmas. Send us the names of all of your neighbors who have turkeys and about how many head each one has on hand, and we will certainly make it to your object to do so.
Mark and consign all produce you have on hand to us at San Francisco.
W. C. PRICE & CO., General Produce Commission Merchants, 211-217 Clay



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May orchardists and vineyardists have long been wanting a strong, reliable, efficient power sprayer of small size. And here it is!

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Bean Spray Pump Co.

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Grades the fruit in five sizes.

The Best Graders for Olives, Prunes, Apples, Lemons, Oranges.

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Markets for every product of Farm, Orchard and Dairy.

Opportunities for Home Seekers and Settlers worthy the most careful investigation.

For particulars address Chas. S. Fee, Passenger Traffic Manager, Dept. O, Flood Bldg., San Francisco.

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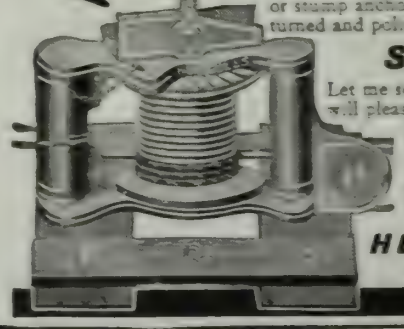
HERCULES

is the only all-steel triple power puller made. 400% stronger—60% lighter than others. Pulls biggest stump in 5 minutes—pulls an acre or more of stumps a day—pulls 3 acres of stumps without moving machine. Has double safety ratchets—is self or stump anchored, built low to the ground and is carefully turned and polished to make light draft.



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THE PACIFIC RURAL PRESS

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Frosts and Northern Oranges.

[BY THE ASSOCIATE EDITOR.]

On the ability of the oranges grown north of the Tehachapi to hold on the trees through the frost season depends in large part the whole future of the industry in central and northern California and to a considerable extent the nature of the industry in all of our great citrus districts. At the start it can be said that the prospects for keeping the oranges on the trees through the coldest period of the year is very bright.

Starting an Orange Growing Plant Near Lindsay.

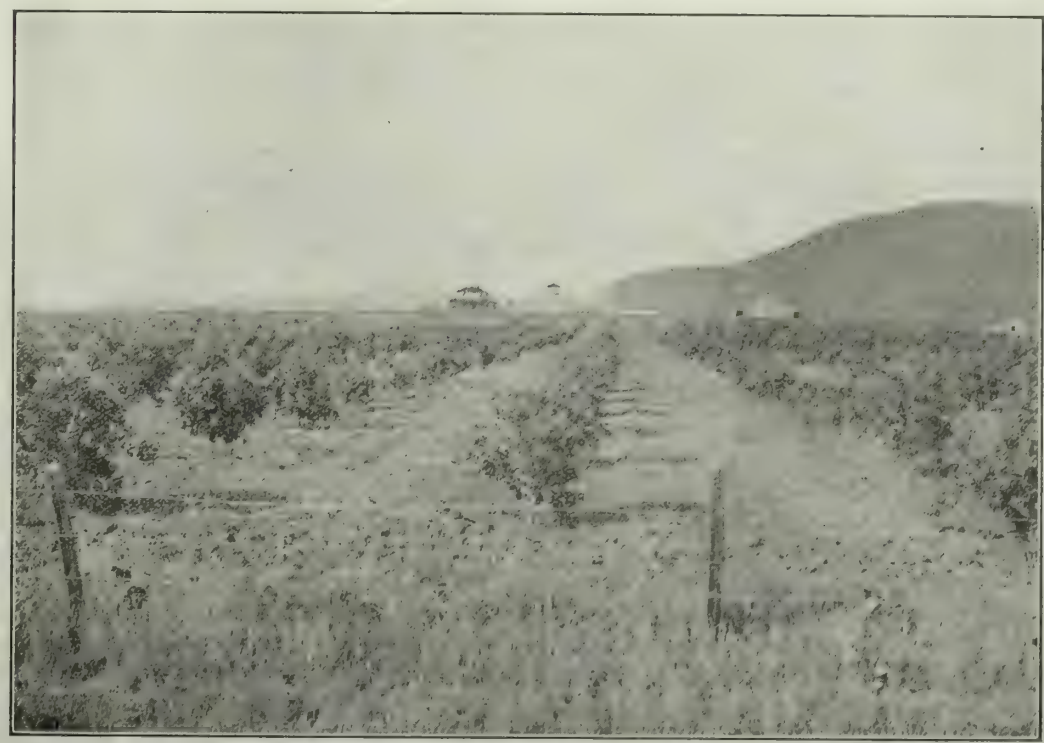
Two things make this subject vital now. One is the greatly increasing acreage in nearly every county touching the foothills in the Sacramento and San Joaquin valleys, making it a question of a very short time before the marketing season will have to be greatly extended. Another thing is the common argument of citrus enthusiasts that although frosts come, the oranges are all off first. Clearly this argument will fall through when 50,000 to 100,000 acres of Washington navels are in full bearing. Much of this fruit will have to survive frosts, naturally or by orchard heating, and the industry will be put on an entirely different, and in some respects a better, footing.

At the start the fact can be restated that northern citrus growing differs from southern. The northern oranges go through much hotter and drier summers, and although approximately the same minimum temperatures are experienced in all sections, save for favorable or unfavorable local situations, cold nights come sooner and more regularly in the north than in the south, and the oranges color up quicker, the trees also going dormant earlier and becoming more resistant to frost injury. The fruit likewise sweetens much earlier, as well as having a better color, and thus it happes that a big start is made in the marketing season, for while north[illegible]anges thus far have been marketed before the frosts, nearly all southern navels are marketed only after the worst frosts have passed. Can northern oranges go over into this period also? They will have to do so or prospective plantings will overwhelm early markets.

Some Indications.—We have two or three guides. One is temperature records, another experiences with fruits left on trees over winter, a third is results with valencias. Temperature records put the northern districts as a whole on about the same footing as southern districts as to extent of cold. In poor locations, however, the cold is worse and a number of very profitable orange orchards in low spots will always have to pick fruit by early December, for normally frosts in such places are too severe and too frequent to make even orchard heating practicable.

In normal citrus locations such conditions do not exist. Some experienced growers claim that if fruit is to be held until, say, February on the average grove that smudging will be practiced on practically the same footing as in southern districts. Perhaps so, perhaps not. It does not seem that any more smudging will have to be done in the north than in the south anyway.

Results with Fruit.—Rather more accurate than temperature records is experience with the fruit itself, either ripe navels or immature valencias. It is vaguely possible, though hardly probable, that the same conditions which toughen the tree will harden the orange against frost, so that colder temperatures than would be thought can be endured without injury. However, it is true that ripe oranges will endure more cold than immature fruit, evidently on account of the oil cells in the rind and the fact that the rind is thicker, softer and something of an insulation. The fact remains



A Tulare County Orange Orchard Well Under Way.

(*Continued on Page 509.*)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Nov. 25, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.08	5.03	8.32	62	40
Red Bluff	.17	4.42	4.90	58	34
Sacramento	.46	3.69	3.11	62	38
San Francisco	.80	5 53	3 53	60	46
San Jose	.68	3.53	2.74	62	32
Fresno	.52	1.98	1.85	62	36
Independence	.40	2.96	1.79	52	24
San Luis Obispo	.60	4.68	3 20	68	38
Los Angeles	1 56	2.96	2.00	76	48
San Diego	1.26	2.29	1 20	72	48

The Week.

It did us a lot of good to see, during our rambles in the interior valley this week, so much water just standing around and looking very pretty to the agricultural eye. It is an excellent arrangement to remind the observer how much has actually gone into the soil and is ready for next year's business. We are not sure that the crowds one is apt to see standing around rural lounging places is an indication of the numbers who have gone to work, but it does work that way with water. We are not sure that we ever before appreciated so fully the blessings of a patch of hardpan in the roadway or in the corral as we have seen this year. A patch of hardpan is a rain gauge in its way. Before our progressive agriculture gets the hardpan all shot up with dynamite or ground up by deep plowing and subsoiling, our farmers should think of the advantage of keeping a good piece or two on each farm so that the farmer can always remember to be properly glad for the amount of water he is getting. It can usually be arranged so that this patch shall be left right in front of the main gateway to the farm, and it will hold a foot or so of mud and water all winter—which will remind each resident and visitor entering the place to rejoice for the rain and express himself accordingly. A good deep, soft mudpuddle is just as eloquent of abundant blessings as is a patch of tall thrifty weeds—both remind every passer of the abundance of moisture; each for its own purposes at least—and neither of them reduces by a moment the time which the busy farmer conscientiously devotes to pedro at the cross-roads civic center, where other indications of abundant moisture are also to be observed.

Weeds on Ditch Banks.

While we were flying along the valley highways and pondering upon the industrial significance of mud puddles at gateways and in corrals, we were also impressed by the beneficence of irrigation as symbolized by the grand growths of weeds along the ditch banks. There were no such weeds on adjacent dry-farmed areas. Perhaps the promoters of these irrigation systems are requiring their customers to leave these ditch-bank weed-gardens untouched just to show how rich the soil is when it has water enough. It certainly looked that way, for we saw many stretches of main ditch and laterals carrying their tall weeds erect, just as the ladies now wear their hat-plumes—these weeds, once or twice the height of a man, waving in the wind and scattering their seeds over the whole adjacent area on both sides and re-seeding a rod or two of alfalfa with their own kind straight across the landscape, as far as the eye could reach. Now we like a good hearty weed; it means land of some kind of producing capacity, both in plant food and moisture; we would be very slow to buy land which could grow only poor weeds or none at all. It is, however, surely unnecessary to grow weeds all over the place as a token of fertility; a good patch can be grown right beside the front gateway, where it can get moisture by seepage from the significant mud puddle to which we have referred and where a particularly fine specimen may be tied up to the gatepost—so that the owner may never forget to thank the Lord for the fertility of his land. If this were done it would certainly be unnecessary to grow those weed-forests on the ditch banks. They should, of course, be cut with a mower or felled with an axe before they have a chance to go to seed. Where this has been neglected they should be burned now as they stand, to kill any seed which has not yet shattered out and the sweep of the flames will probably roast much seed which still lies on the surface of the ground beneath them. These weedy ditch banks seem to be a wild, western way. We saw miles and miles of ditch banks in the valley of the Po last summer—either clean as a floor or carrying thrifty, useful plants to the water's edge. We will get to that some day.

Laying Foundations for Farm Credits in California.

We are fortunate in being able to do some talking about farm credits before audiences of California farmers and we find them everywhere greatly interested in the achievements of distant people and keen to consider what can be done to secure easier money for farming under California conditions. We have no scheme definitely wrought out to secure this eminently desirable result. It is clear enough to our comprehension that we cannot imitate European methods, including either all the methods or all the principles which they approve or apply. Our people are nationally and individually different, and besides that our constitutions and statutes involve quite different conceptions of the rights of men and the functions of governments. But we have another conviction on the subject which is just as clear, and that is that we have in our agricultural people a quickness of perception and a strength of reason which will enable us to work out more in a decade in the way of forms of credit for our needs and conforming to our conditions, than European experience of half a century can directly teach us. This experience and practical developments involved in it are of course invaluable, but they must be Americanized. It therefore seems to us that the first step toward this end will be for all the agricultural organizations of California to take the matter up at once for thought and preliminary action. The report of the American Commission is expected to issue before the end of this year, or very soon after, and will be printed by Congress for general circulation. It will be easy for all interested to get copies by applications; the direct method thereof we shall announce later. On this basis all associations should proceed to do something either by preliminary transactions of their own or in support of general commendation of such legislation by Congress or State legislatures as they may approve. In California we have many general and local associations which have already gone considerable distances on the road toward financing themselves. This distance is, in each case, a distinct advantage and extensions are perhaps all that are required to reach results of great advantage. The question for each association should be, not what we think, but what can we do? Nearly all European systems are founded upon pre-existing associations which had influence and power, but could not go far enough. That is just the condition of very many influential organizations in this State. Good foundations are already laid; let us build upon them. Every farmers' association can do something!

Co-operation in Great Affairs.

The thought that co-operative effort in individual associations should be the basis upon which to advance the credit propositions suggests also the pertinence of the principle in affairs of wide moment in general State progress. The proposition for a league to promote development made at Marysville has awakened new interest in the fact that we already had several agencies working toward the same end, and three months postponement of action was secured to allow the subject to be looked into. It is a matter on which all who are working for development should get together. Governor Johnson's advice to the Marysville meeting was good. It is currently reported in this way: "If the northern part of the State is to advance as it should the counties in quest of greater development must work in unison and without bickerings and petty squabbles." In three months, probably, all those interested can get together on a plan for a greater work. Secretary Lane at Washington, about the same time was trying to harmonize those who are fighting for national as opposed to State rights in matters of conservation. Secretary Lane declared that the greatest obstacle in the preparation of an adequate conservation policy was the conflict between those who believed in centralization of government and those who believed in States' rights. This conflict, he said, was responsible for the difficulty the Federal authorities experienced in obtaining the co-operation of state officials. Now, the Government is not wedded to any particular theory, but it is wedded to practical tests that will develop something to better the country," continued Secretary Lane. "We are indifferent to the agency employed. You represent the States, I represent what is called the central government. We can co-operate and manifestly there can be no success unless we do co-operate." The great difficulty seems to be a contest between those who have vested rights and those who have no rights at all—unless they be political. The people could well cry "a plague on both your houses." The public interests can be best served by co-operation of general and state governments to secure the utilization of resources for the whole people rather than theoretical conservation which means disuse. The West calls for conservation through use as conditions of development require. The Western idea will prevail when it becomes more widely understood.

Our Natural Resources.

Thirty years ago all Californians were exhorting the outside world to pay attention to our grand scenery as a great natural resource of the State. Since then all the esthetic has gone out of us, and we have taken to exhorting the world almost wholly on the basis of gold winning from

oranges, alfalfa, live stock, and the like. We simply took the broad swing to the practical, and it was rational and justified and has done a lot of good. But surely a campaign again on the esthetic line is desirable, and Secretary Lane is going to conduct it on progressive lines surely. "Come and see America's natural scenic beauties," is the invitation which Secretary Lane is making ready to extend to tourists in Europe. Through this country's consular agents abroad, the State Department consenting, he is preparing to discover the best method of informing Europe's travelers that the national parks, snow-capped mountains, and gorgeously colored canyons of the United States can offer them views as fine as any to be found in Europe. A list of questions will be sent to consular agents in Europe to get their views as to the best method of inducing European nature lovers to visit this country. When one sees the throngs of Americans spending money in Europe he will get a pretty strong notion that we ought to get more in return than imported goods and immigrants. We need European gold to balance the drain upon American supplies made by American tourists in their summer expenditures abroad. Of any such movement, California is naturally endowed to get her share and incidentally to show how good a place California is for the investment of money in productive enterprises and in the delights of stated residence. At any rate, we are glad that our grand mountains, trees, lakes and canyons are to have another inning. We have really become so practical that we had almost forgotten that they were set up to uplift humanity and that we ought to help them to do their duty. The inquiry upon which Secretary Lane enters is likely to yield some very interesting results.

A Much-Enduring Horse.

The much-enduring Ulysses of our day is apparently a Western broncho. There used to be much claimed for the broncho because of hardiness and endurance which had been developed in him by the equine salubrity of Pacific Coast climates. It used to be calculated that the qualities bred into the broncho would mean much to the horse world. Recently, however, we have heard much less about it and naturally, perhaps, because that which makes for money in a horse now is very different from that which was striven for a third of a century ago, and yet the endurance of the broncho—who knows that it may not be still waiting for some superior service to mankind? At all events, we are to have a spectacular re-awakening of interest in the broncho, providing a test now in progress pulls through all right. It is telegraphed from New York this week that five Montana cattlemen had arrived in that vicinity on their round trip across the continent and were heading westward toward San Francisco. They left Olympia, Washington, May 11, 1912, for an endurance test of a Western broncho named Pinto. They are backed by a group of Western cattlemen to visit the capital of every State in the Union and reach San Francisco for the opening of the Panama-Pacific Exposition. They have already visited the capitals of twenty-eight States, having ridden 9700 miles. They have used up six horses, but Pinto is still strong and fat, and if he makes the return trip all right he will be on view at the exposition and will bring the men who engineered it for him $20,000. It is surely a good foundation feat for a side show at the Exposition. But poor Pinto has probably no family to inherit the glory of his achievement, nor can it be recorded in any herd-book. As one looks into the British Short-horn Herd Book he will find pedigrees running back to the "White Heifer that Traveled." Just think what a narrow pedestal she had for fame enduring to this day as compared with the base of Pinto's glory. By going through a few shires in England this white heifer still lives and transmits her fame and quality, while Pinto's honors will perish with him unless breeders should find something in his deeds which belong to the whole broncho brotherhood.

Queries and Replies.

Orange Budding.

To the Editor: In getting "buds" from lemon or orange trees for budding, I note in "California Fruits" that you advise not using "suckers." In cutting the little branches I find a good many have a little leaf started and right along side of it a little sharp thorn. I desire to ask if this would be considered a good bud. Would you consider the buds at the tip end of the branch suitable providing they were large enough to use? The man who did my budding two years ago didn't get over a 50% stand, while the last year's budding, by another man, got 80%.—R. L., Los Angeles.

The objection to sucker-buds is based upon two apprehensions: one that the tree grown from such a bud will either be delayed in fruiting or will be unfruitful, or the fruit when it comes will be of a coarse, undesirable type. There seems to be very strong feeling among planters that one or both of these evils will be encountered and therefore the objection to trees grown from sucker buds. There is, of course, quite a temptation to use them, because they are handy and easy to obtain in considerable numbers. We are not aware that the popular belief on this subject has been actually demonstrated, and there are some propagators who do not hesitate to use sucker-buds. The best buds are secured from the lower portions of the youngest well-matured wood growing on fruiting branches. Thrifty branches are preferred, though not necessarily large ones,

The presence of a thorn is not objectionable, except that a clean bud with a good leaf stem is more easily handled. The differentiation between the leaf and fruit bud does not arise, because if you take the newest mature wood you are not likely to encounter fruit buds. In this respect the orange resembles the apple, pear, cherry, etc., because the fruit is borne not on the new wood but on spurs or twigs which develop on the older growth. In budding, very much depends upon the personal knack of the budder, so there is a vast difference between men in this respect, and one must be always on the lookout to secure the services of one whose work demonstrates his skill. You can certainly use buds near the tip of the new growth, providing they are well developed. Usually, however, the upper part should be rejected because of lack of development and maturity.

Eucalyptus Oil.

To the Editor: I have a plantation of eucalyptus which is doing finely. I wish to know about the method and outlook for making eucalyptus oil.—R. E., Santa Barbara.

Eucalyptus oil is made in a very simple kind of a still. A steam-tight vat or tank into which steam is admitted near the bottom from any kind of a small steam boiler can be used. The steam is taken off near the top of the vat or tank into a pipe leading to a worm coiled in a tank of water where the steam is condensed and water and oil run out into a receptacle below, the oil, of course, rising to the surface and thus separating itself. The oil can be cheaply made, the main trouble is the fact that there is no considerable demand. Some years ago when there was a eucalyptus oil preparation used for preventing scale on steam pipes there was more demand, but that petered out for some reason and there is no present demand for eucalyptus oil except for druggists' use for liniments, etc., and the American people seem to be so healthy that there is no large amount of oil needed for their anointing. Of course, one cannot tell when new demands may arise or markets be found in foreign countries. You can, however, be assured that eucalyptus oil can be produced in very large quantities very cheaply, because the labor is not very great and the still, through which the leaves and young branches can be put in large quantities, is very simple. The distillation more closely resembles the manufacture of peppermint oil than anything else known to us, and the peppermint is brought from the field just like alfalfa hay, and pitched into the distilling tank by the wagon load.

How to Find a Legume.

To the Editor: Can you tell me what would be the best cover crop to plant in a prune orchard in Sutter county. Both rye and clover have been recommended, and the ground will soon be ready to plow and sow.—M. S., Yuba City.

The best cover crop is the one you are sure to get most growth of before the spring date at which you have to plow it under. Any legume (clover, vetch, etc.) is better than rye, theoretically, because of its greater content of nitrogen and its ability to get nitrogen from the air, but you are not sure if a legume will make enough winter growth until you try it. You are sure of rye. Therefore, sow rye largely and several legumes (field peas, vetch, burr clover) in small areas so you will know next year whether you can depend upon any of them for the free winter growth which you need. If you prove out such a one as satisfactory, sow that next year and the next, and live happily forever afterward.

Alfalfa and Alkali.

To the Editor: How can I start alfalfa on a heavy clayey loam (almost an adobe) and a portion of it with a very considerable amount of alkali; mostly white, but with some of the black salts. Would lime put on this land and worked in make a better condition for a seed bed, or would gypsum give more satisfactory results? Last year a party advised me not to plant alfalfa on these lands, but to sow barley. If planted to trees, what fruit would best resist alkali?—R. K., Oakland.

We should be very careful about trying alfalfa on heavy land containing alkali, for fear of losing time and seed. Try it first for a barley crop and see how that comes through. Lime is good in its effect upon heavy soils, providing they are not alkaline, but there is no advantage in using lime on alkaline soils—it simply adds to their alkalinity. Gypsum will transform black alkali into white, which is less corrosive, but still even alfalfa will not grow on white alkali if there is much of it. So you need to experiment carefully before putting in your money. Pear tres are most resistant of alkali, other fruits very sensitive.

Bleaching a Few Walnuts.

To the Editor: I have about 200 pounds of walnuts and would be pleased to have you tell me how to bleach them. I have been looking through the files of the old RURAL PRESS, but find no formula except the electrical process, which is out of my reach.—C. D. H., Santa Cruz.

The amount of walnuts which you have is too small to warrant fitting up any bleaching process which requires considerable outfit. If you have a sulphur box such as is used in fruit drying, you can brighten the nuts by sulphuring. Let them get thoroughly dry after gathering, then moisten the surface of the shell by very slight spraying, using a spraying nozzle and not a sprinkler. When thus slightly moistened on the exterior of the shell, they are treated to sulphur fumes in the same way that cut fruit is before drying. Sulphur carefully, for an overdose is not desirable.

A New Big Irrigation System.

[By the Associate Editor.]

No single thing is doing more to develop California today and make it a region of small farms than irrigation, whether it be by pumping, small private gravity systems, or the great irrigation systems established by irrigation districts or large companies.

These big irrigation systems are of two kinds. In the common kind the water is taken from streams in the mountains and conveyed by gravity through long canals to the land beneath the laterals. In the other kind modern science, in addition to construction, plays a large part. The water is taken from a river or some other large surface source of supply, but in the valley, not in the mountains, and is lifted, perhaps in several great steps, by large, powerful pumps, into canals, from which it flows by gravity over the land.

This is the method of operation of the Balfour, Guthrie & Co. irrigation system at Brentwood, northeastern Contra Costa county, and one or two other systems, including that at Patterson, farther down the San Joaquin valley. The initial cost of such systems is much smaller per acre than for the first-named kind, as a rule, for there are no hills to bore through, or no long, winding canals; but everything is built on the floor of a valley, where slopes are gentle and cuts and fills small. The upkeep of the canals is also correspondingly less, but on the other hand there is the cost of pumping all the water used and the repairing and replacing of pumps and other machinery. Counting interest on initial cost and the cost of maintenance and operation and service rendered, there may be about as much to say in favor of the one as of the other, but the thing that counts with both is that the water is worth many times its cost.

Location and Nature.—This Brentwood country, where the system is located, now approaching completion, is in the extreme northwestern part of the San Joaquin valley, though it has a combination bay and valley climate. In front to the east is the wonderful delta country; behind, Mt. Diablo and encircling hills.

This district, lying between Suisun bay or the delta country and the Coast Range hills, is modified greatly in temperature by the bays and the ocean winds that here enter the interior, but yet is far enough inland to have nearly as much sunshine and as little fog as the interior valley itself. The maximum temperature for Brentwood, for example, is given as 103 degrees and the minimum 29, or only three degrees of frost.

The valley itself at Brentwood is just about six and a half miles wide, that is, from the beginning of the hills to the overflow land next to the tules, which are now all reclaimed near here. The soil here is a rich, deep, rather heavy soil derived from the hills behind. Such soil has been fine for alfalfa down in western Stanislaus and Merced counties, and is just the thing that satisfies walnuts. From a climatic standpoint also this bids fair to become a very prominent walnut district and one suited for diversified farming. The first sweet corn in San Francisco markets frequently comes from the Marsh creek, up the hills a few miles above Brentwood.

Up to the time that these irrigation works were started, however, the land was totally neglected for everything except grain, and there is no irrigation now between there and Patterson, which has the same kind of a system, though Tracy people are planning an irrigation district along the same lines also. The only demonstration of the possibilities of the soil, outside of grain, has been in the small towns or in the yards around ranch houses, and those are neglected enough, in town and out. Rainfall alfalfa is also occasionally grown on the lower lands and does finely. Even the vegetable wagon for the district comes from Livermore, many miles south, the other side of Mt. Diablo.

The Supply and the System.—The supply of water is unique, inasmuch as it comes from tidewater, not directly from a flowing stream, and yet it is fresh and sweet all seasons of the year. Theoretically it comes from the San Joaquin river, but actually it comes from one of the sloughs running into the delta that is supplied with fresh water from both the Sacramento and San Joaquin rivers, especially the former; while the tides in Suisun bay, a number of miles to the north and west, hold back this fresh water for hours before salt and fresh mix. At the intakes there are four feet between high and low tides, which would give enough water to irrigate a county.

In early days this tidewater was the means of getting low freight rates for the farmers. The railroad established higher rates than they thought were fair, and they formed a corporation to establish a shipping point at Indian Slough, from which the water now comes. It was hardly used, however, for the railroad lowered the rates to make water shipment unnecessary as soon as the water shipment was available. In case of emergency, this could still be used.

The irrigation system itself covers between 7,000 and 8,000 acres of the Ranch de los Meganos, one of the old Spanish grants. It came into the hands of Dr. John Marsh in early days, who built a large stone house upon it, which is standing today, where Marsh creek emerges from the hills, one of the first and finest stone houses in California. After his death the grant, comprising about 13,000 acres in all, followed the same unfortunate course as many other large California holdings: it came into the hands of heirs, but was not divided so that the advantages of individual ownership and initiative could be obtained. It remained under one management, simply a large estate, tied up in the courts, in a way that permitted little progress in development to be made. Balfour, Guthrie & Co., several years ago, became interested and bought out practically all the heirs, securing absolute title to more than 12,000 acres. The irrigation system was planned and an opportunity given to owners of adjoining property to come in to make a total of 22,000 acres under a ditch. When they did not care to do so, the company went ahead on the system for more than 7,000 acres of irrigable land of its own holding. However, seeing that all or a part of this outside land might sometime be added to the system, the capacity of the main canals was made sufficient for the whole 22,000 acres, instead of only 8,000, and if other land does come in, the construction of laterals and more pumping will be the only extra expense.

The System.—The plan of the system is to pump water from the Indian slough to a concrete-lined canal and to carry it along toward the hills until another lift is necessary, and so on. The main canal is about six and a half miles long, running due east and west. The lifts average 16 feet and are from 12 to 17 feet from water-level to water-level. The sections run from a couple of thousand to over 7,000 feet in length. The canals have a capacity of 195 cubic feet per second for the first one, to 65 feet for the last, each step having a capacity of 26 cubic feet less than the preceding one, giving that much water for laterals to remove when they are constructed.

There is, in a way, another step to the canal that works by itself. A canal was dredged out a mile and a quarter long through the low land adjoining the tules from the old end of Indian slough to the intake at the first pumping station. This is about 16 or 17 feet deep, bank to bottom, and 40 feet wide, and can easily be used for navigation, if that is needed. The water carries some sediment and more or less rotten tule and vegetable matter in suspension to enrich the soil.

A concrete tunnel runs from the end of this to the pumping station, in which are a number of centrifugal pumps, 18, 24, and 30 inches in diameter. Just as many of these can be operated as are needed, up to the capacity of the canals, or rather, up to the demands of the land under irrigation. Each pump is operated by an electric motor, direct connected to the pump. Power is to be furnished by the Great Western Power Co., and the power is conveyed along the canals in wires carried by reinforced concrete poles 40 feet high. In fact, everything possible is of reinforced concrete, which will make depreciation and cost of upkeep just about as low as can be.

The irrigation system goes with the land, a share of stock to the acre, no one to get water except stockholders, and when all the land is sold the landholders will own all the company. The cost of providing water will be, it is calculated, $3 per acre per year, when one foot is taken, and more when more water is used, so that for alfalfa or other crop that will take three feet of water, the charge will be about $7 per acre per year, total cost. Water will be running in unit 1 probably before the first of the year, at least long before spring. The whole system will not be completed until later.

This is not a pioneer system of the kind, as others have demonstrated the success of the method, but it is a well conceived and well executed system, and it is only a question of time before this plan is followed here and there all over California.

WHO IS TO BLAME?

Anybody is welcome here to figure out whether damages were sustained by some one or not, and if so, who was to blame. The olive market is glorious. Pickling olives are worth, from accounts from several quarters, $160 up to $200 per ton, and buyers hungry for them, now or by contract. We went through the commission district of San Francisco the other day and found ripe olives in lug boxes in quite a number of the houses, priced them, and discovered that they were offered at 7 cents per pound, and probably could have been secured for less. Now that is $140 per ton, and from that would have to be taken the expense of handling from warehouse to city sidewalk, commission, and all the rest of it. The only fault to find with them was that green and ripe olives were together; they were not as a pickling plant would wish them; but that is a matter of unwise picking—an unnecessary loss, if conditions were usual. We did not follow the matter out to get details, and didn't care to. The fact of 7-cent olives on city streets and 8-cent olives in the country showed a snag somewhere. No farmer is going to get rich handling or selling his produce the wrong way, and the problem here is, Who is to blame in this case, and who bears the burden? D. J. W.

INTERESTING QUESTIONS ABOUT FRUIT.

To the Editor: Will some of your readers who are late pear growers discuss the relative values of the late pears. In the actual market to me there is no better late pear than the Winter or Easter Beurre. It is a splendid keeper, fine flavor and lasts very late in the season, much later than the Winter Nellis, the next best late pear.

The question I wish to set is how the Easter Beurre bears from those that have grown them. Why are they not more grown in this State—when late pears are very much in demand? The winter Bartlett is good, but not as late even as the Winter Nellis. I have eaten Easter Beurre in March when no other pear was on the market. They are always a good size.

Of the early peaches those that ripen in June, Briggs May and Alexander are usually in the lead. Alexander is, however, the better. How much earlier is Briggs May than Alexander? Let us hear! Has anyone tried the Greensboro peach, a North Carolina introduction of very early ripening? L. E. Blochman.

Berkeley.

RULE FOR FIGURING AREAS.

To the Editor: Kindly inform me through your paper how many acres are contained in a piece of property 395 by 678 by 511 by 428 feet; also give rule in figuring same. Subscriber.

San Francisco.

[Without more data it would be impossible to tell the area of a land of irregular outline like this, for one must know one or more angles as well as length of sides before he can begin calculations. Two pieces of land with the same length of side might differ materially in size on account of the way the sides were put together. You will soon see this if you draw a few diagrams on a sheet of paper. Even when you do know angles as well as sides, it takes a mathematician to find the area, and we cannot give any rules, except this: After you have found the square feet in a piece, divide by 43,560 and you will have the number of acres.—Editor.]

Frosts and Northern Oranges.

(*Continued From Page 505.*)

that in numerous commercial groves in northern districts oranges have been held over until spring without injury in average winters. Even the great freeze of last January, searching out every spot possible to place its cold, left both trees and fruit in some places almost unaffected. Yet the fact remains that in a number of leading districts even the trees on some fairly well located groves were somewhat cut back, the fruit would have been ruined, and most growers should figure on losing occasional crops by frost if they do not apply heat or if they are not in very favorably situated locations. Experience with the navels themselves, however, leads to a firm belief that in locations a man should select oranges that can be carried through many winters naturally, that occasional smudging would prove sufficient in ordinary winters and that only in great emergencies like last winter, where severe cold and a big movement of the atmosphere came together, would smudging in fair amount be ineffectual.

Experience with valencias is also enlightening. Last winter the crop in most places was destroyed. The year before was much colder than usual, and very little loss by dry fruit only was sustained, although running water down the rows was the only protection used in most cases. If valencias can be profitably grown with little, if any, frost protection, it is indication that navels will get along about as well, and the fact that valencias have held their own, given greater profits than navels, and attained great popularity makes a pretty good argument that frost injury is little to be feared in proper locations in the Sacramento and San Joaquin valleys.

This one point, however, has to be considered. Although the valencia is more susceptible to frost injury than the navel in one way, it is less injured in other ways. That is, when only one or two sections are dried, uninjured sections will grow to crowd these together, making a layer or skin of pulp only, and leaving the orange nearly as good as if entirely untouched. This frequently occurs in some groves, showing that there is little margin of safety. Cold that will do this is about as much as a navel can stand. The fact of the matter seems to be that in good locations the oranges will come through the winter with about the same orchard heating as in southern districts, possibly a little less.

Storage.—The possibility also exists that oranges can be picked before the serious frosts and held for a long period or picked in spring and stored to lengthen the marketing season if such a thing would ever be necessary. The consensus of opinion seems to be that stored oranges, though keeping in good shape for a long period, will not hold up as long after coming out as a fresh orange would. One citrus grower, however, tells of overlooking three boxes of navels one picking, as they were under the branches and not found until the spring plowing in April. The burr clover had grown through them, but not an orange had spoiled and all were in prime condition. However, even with the utmost increase of acreage, it is not likely that it ever will be necessary to store oranges to lengthen the shipping season, though it may be practiced somewhat on a few groves to avoid frost.

The New Conditions.—The changed basis of future citrus production in the north owing to the rapidly increasing production can be calculated more or less accurately.

For one thing the early market—that is, the Thanksgiving market—will occupy a very secondary position, to the profit of the quality of the regular shipment.

While the early orange is sweet early in November, few people would eat it for the clear joy of the thing until later. Little fault can be found with it two weeks after shipments begin in earnest, and by December 1 much of the fruit is in first-class trim. It keeps in ideal condition well into March, and so northern fruit can be shipped ultimately from December 1 to say March 15, with no deterioration in quality, long before which time southern navels can be marketed in the best of condition. For ripeness and quality, however, the northern fruit will have the advantage of the southern by at least a month's time. This will mean a uniform and abundant supply of first-class fruit from December until the last valencias go out in the fall.

It will also improve the quality of the first fruit shipped in the fall, for so much will soon be available that only the best will return fancy profits. Although this fruit is good, it could well be better, for as G. Harold Powell recently said at Lindsay: "No hard and fast standard of ripeness can be fixed, but when you and your family eat oranges with enjoyment they can be shipped. Until then they should not be."

This condition does not yet exist; there is a rush for the early market, and the rush to get the oranges off as quickly as possible continues, so that for quite a period none of the fruit going out is at its best. Far-sighted growers even now figure on better profits by holding till the fruit is in prime condition, and this will later be a forced condition. It will so improve quality and prices that consumption will increase greatly and profits endure.

A forecast of California market conditions 20 years hence puts the industry on about this basis: Washington navel groves will line the foothills from the Tehachapi to Red Bluff, where soil, moisture and temperatures are suitable, and continue down the west side to Winters and vicinity; valencias being well represented also. This will supply fruit through winter months, the southern groves taking up the shipments until the navels from there are gone. Then will come the northern valencias, then the southern valencias until the time for northern shipments to begin again, and the fruit from all will be ripe and fine. The opening of the Panama Canal and the normal development of markets can reasonably be expected to make a greatly increased consumption of citrus fruits, and our citrus industry will be far bigger and greater than ever it has been before.

GRAPEFRUIT IN ALFALFA.

To the Editor: In your book "California Fruits" you suggest the use of alfalfa as a permanent cover crop for orchards. Your discussion is most interesting, and I intend to try alfalfa between orchard rows (on light sandy loam soil) to build up the soil and feed the trees.

If you will criticize the following plan, or make any suggestions, I shall be very glad to post you on the outcome of the experiment, as I feel this is one of the most vital questions in horticulture today. My plan is to plant grapefruit on wide borders of alfalfa. Have the alfalfa borders 8 feet wide, trees in middle of same, just leaving room to use one-horse narrow cultivator on each side of trees. The alfalfa to be in beds 20 feet wide, giving 24 feet between trees.

Now as to alfalfa. The plan is to cut it before it gets too woody and heavy, let it dry on the ground where cut, and then in a few days disk the cut and dry alfalfa right into the alfalfa bed. This would bury a great deal of the cut alfalfa, and would root-prune and renovate the growing alfalfa. Then irrigate. Repeat this system as often as the alfalfa needs cutting, and cultivate only just on each side of the trees on the border; having a furrow on each side of trees to water them as they need it. This plan is to grow, cut and disk-in alfalfa for the trees, not taking a pound off the land. The object of this plan is solely to build up soil fertility, and the alfalfa would be irrigated only so much as would not hurt the trees, making the trees always the first consideration. In winter I would irrigate very little or none, to harden off the trees for cold weather. Even if I can grow and turn under a half crop of alfalfa, and keep at it, I think it should in time build up this light soil. I would be glad to hear your opinion of this plan. We are not located well to get manure, and this seems our only chance to get humus permanently. E. P. CARR.

Thermal.

[Your proposition concerning a way to use alfalfa in an orchard is very interesting and rational. In some places in Arizona, trees are satisfactorily grown in alfalfa, cutting for hay and never removing from the ground as you propose. The only question which arises in our mind is as to disking the alfalfa so often, and whether a disking after each cutting would not kill instead of renovate the alfalfa plants. This is a matter you would have to determine by experiment. Certainly a disking once or twice a year would prevent the ground from packing, would introduce the decaying vegetation, and is on all accounts desirable. We would be exceedingly glad to have your observations of the results of this method if you should conclude to put it into practice. Of course, you know that a green cover has the tendency to reduce the soil temperatures, which under your desert sun might often be desirable, and that is one of the main reasons why an alfalfa cover has been used for the last ten or fifteen years or more in Arizona.—EDITOR.]

TURKISH TOBACCO IN CALIFORNIA.

To the Editor: Many farmers in Kings county, including myself, would be very glad to see an article in the RURAL PRESS dealing with the planting of Turkish tobacco, a short description giving information for making the seed bed, planting the young plants, the point when the tobacco is ripe for cutting, and the curing process—and may the great Sunspots and Ricard guide you forever.

Hanford. K. W. R.

[Anyone interested in the growing of Turkish tobacco can get more detailed information by far than could be given in these columns by writing to L. H. Umstead, Exeter, for a booklet describing methods. This, we believe, is given free on request, being issued with the object of putting the industry on its feet. Mr. Umstead can also advise concerning location, markets, and such matters. Regarding the status of Turkish tobacco growing, Mr. Umstead writes us: "Turkish tobacco is only used for making cigarettes and nothing else, while the ordinary American tobacco is used in all forms of smoking and chewing.

"In regard to the price, the 1913 crop has not been bought yet, but the price on the 1912 crop ranged from 30 cents to 65 cents per pound. The prospect in the San Joaquin valley is very good for Turkish tobacco. There is about twice as much tobacco raised in the valley this year as there was in 1912." (The 1912 crop is given in the booklet as 150,000 lbs.; that of 1911, 45,000 lbs.; 1910, 15,000 lbs.; and 1909, 7,000 lbs.)

"The cost of raising the crop will depend on the judgment that is used by the farmer who is raising it. Some farmers will raise it cheaper than others. Three hundred pounds is a good average for the acre of the right kind of tobacco, but the crops so far have averaged 400 or 500 pounds, but it is a little too large for a fancy price."—EDITOR.]

WRAPPING TREES FOR FROST

As the season for frost approaches and owners of young trees of certain kinds begin to think of protecting them from frost injury it is a good thing to remember that burlap treated with oil gives much better protection than untreated burlap. Burlap alone will get damp and it will freeze and often do more injury than if the trees were left to look after themselves. When there is a small coating of oil on the burlap it will shed water, for one thing, and, for another, it will let less cold air enter and be more of a protection than dry, untreated cloth.

A good many people wrap their trees too early. It is better to wait until the growth has stopped about as much as it is going to and the wood is rather dormant. Cornstalks and similar materials also are an excellent protection and more commonly used for young citrus and fig trees than is burlap itself. D. J. W.

Put Alfalfa in Right.

(Continued From Last Issue.)

LEVELING OF STRIP CHECKS.

The proper leveling of strip checks is a somewhat different matter. As the water is to flow down the long way of the check it is not necessary to level the checks in that direction, but merely to smooth off the surface to an even grade or slope, so that the water will flow evenly down the checks.

But in the other direction, that is, across the width of the checks, accurate leveling is of the utmost importance, and right here is where many grading contractors fall down on the job.

If one side of the check is left higher than the other, it is obvious that the water will flow mainly, if not wholly, along the lower side, leaving the high side relatively dry, unless the water is dammed up in some way (by using boards or by making dams with the shovel) to force it up on the high portion. The same is true of occasional high spots that may be left, when the general level across the check is pretty good.

Low spots in the checks are nearly as bad, for though they always get enough water if any part of the check does, they often get too much and the water remains standing in them to the injury of the alfalfa. In any case they are apt to get more water than is needed, and they also have a tendency to draw off the water from the higher ground.

High places of any kind in a strip check are unqualifiedly bad. As pointed out above, much hard, laborious work with the shovel, doubly irksome on a dark night by the feeble glimmer of a lantern, is necessary to force the water up over them. Even with much effort it is often impossible to give such spots enough water for good growth, the consequence being an uneven crop and loss of part of the yield that could be had with uniform watering.

Be sure, then, that your grading contract for strip checking calls for accurate leveling of the checks crosswise, as well as the leveling down of all high spots and the filling up of all low ones.

"WATER TELLS THE STORY."

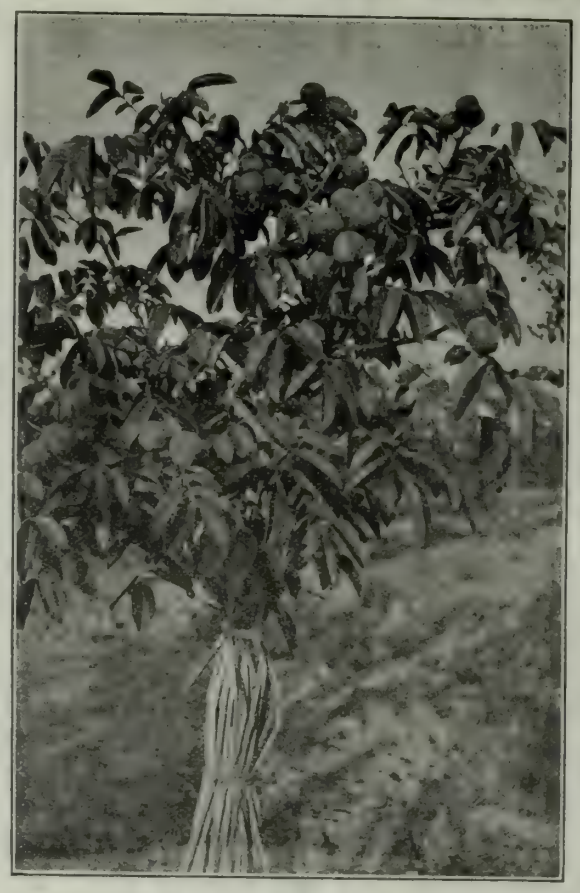
People often ask: "How can I tell whether my checks are properly leveled or not? This work is all new to me and I don't know anything about it. The contractor says the leveling is all right, but I should like to know for myself before paying for the work."

Now there are just two ways of testing the leveling of checks. One is to go over them with a surveyor's level and target. This requires a man who can handle the instrument, and is a slow and rather expensive operation. The other way is very easy and costs nothing but a little time. It can be done by any intelligent man, even if he is totally unfamiliar with irrigation work and has never seen a piece of land checked before. This method, moreover, is absolutely accurate; there is no chance of a mistake if the party keeps his eyes open, for infallible natural law is on his side. Nature does the work free of charge, and all he has to do is to notice carefully what she shows him.

The method is simply to go over each check while it is being irrrigated, and to note then and there the story told by the water as it runs over the land. It will not do to stand at the head of each check and glance casually at the water flowing over it. It is necessary to get out and on the checks and follow the water over them; in other words, to watch the entire process of irrigation on each check. It can then be seen just how the water distributes itself over each check, whether easily and uniformly, as it should if proper leveling has been done, or with the need of much shoveling on the part of the irrigator to force it on high places. All such high spots, if any, should be carefully noted, as well as spots below the general level, and the work should not be accepted until all the high places have been scraped off and all the low ones filled in.

The experienced eye can judge of leveling fairly well after the irrigation has been done, by noticing how the water has run over the checks, as shown by the water marks on the surface of the ground. But for the inexperienced, the safest way is to be on the land while it is actually being irrigated, and read the story of the water as it is being told for his benefit. Let him remember that a strip check ideally leveled would be like a billiard table slightly raised on one end. The nearer his checks approach this ideal, the more perfect and easy will be the future work of irrigating the alfalfa.

During the irrigation note carefully all squirrel holes. The latter should be plugged as far as practicable while irrigating by shoveling earth into them as the water runs down them. Watch the check levees and take note of any weak spots that need to be reinforced. Note also the behavior of your ditches under this first irrigation. Low or weak places in the banks must be looked out for. See that the ditch grades are all right and mark the location of any drops that may be needed in order to get the water out on



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Also Genuine Franquette Grafted on Cal. Black Root.

A WARNING TO THE PUBLIC

The Pacific Pipe Co.'s pipe has such a wide reputation for value that some dealers have been led to stultify themselves and mislead the public by trading on the popularity of no name. They obtain samples of our material in some indirect way and then make a flaring announcement to sell them at ridiculously low prices.
When you are offered pipe at ridiculously low prices by such dealers you'd better go slow.
The object may be to get you to figure on good material and then to deliver you an inferior pipe.
The safe way is to buy only from the Pacific Pipe Co.
We appreciate the confidence which the public feels in us and in our goods, and we make this announcement to enlighten you and to prevent deception.

PACIFIC PIPE CO., Main and Howard Sts., San Francisco.

FLORIDA SOUR ORANGE — **SEED-BED STOCK** grown without shade, as are ours this season, are vastly superior to those grown under shade. — GROWN OUT DOORS

They are all hard wood, have a magnificent and abundant fibrous root system and, being grown in the sun, will stand up well when transplanted in nursery row. We have the largest Citrus Seedling Nurseries in the State, as well as a good stock of budded trees, Navels, Valencias, Lemons and M. S. Grapefruit. Order now.

SOUTHLAND NURSERIES, F. H. DISBROW, Proprietor.
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RELIABLE TREES AND VINES

There is a good strong demand for first-class trees from reliable nurserymen. We want to again take care of our old customers and supply some new ones with what they will need for this season's planting.

Submit to us a list of what you will need at once, please, for our estimate of cost.

OUR CATALOG FREE FOR THE ASKING

Kirkman Nurseries — Main Office 2500 Tulare Street — Fresno, Cal.

the checks easily and expeditiously.

As soon as the land is dry enough to work finish up the leveling. At the same time fill up the squirrel holes, if any, and do whatever may be necessary to put the ditches and levees in first class shape.

In completing the leveling the use of a home-made plank leveler or smoother will be found quite efficacious. This is made of two pieces of 2x6 or 2x8 pine 16 feet long set four or six feet apart standing on edge and beveled at one end like a pair of sled runners. Between these runners are placed cross pieces of the same lumber, set with a slight slope backward. When this is dragged over loose earth it shaves off the high spots and drops the earth into the low places. Running this leveler up and down the checks lengthwise will smooth off the land to an even grade.

WHEN TO PLOW.

After viewing the results of planting alfalfa on loamy soils having plowpan without first plowing the land, no rational man will dispute that on such soils deep plowing is essential to the preparation of land for alfalfa. The question remains, whether the land should be plowed before checking or after. There are two sides to this question, as to most others, and in considering them we must bear in mind the object of plowing. This is first to break up plowpan where it exists and to open up the soil to the free penetration of water and air. Then comes the preparation of a mellow seedbed, in which the alfalfa seed may find congenial conditions for quick germination and rapid growth.

In general it may be said that if the land has a somewhat rolling or "hog wallow" surface, it should be plowed first, before any leveling is done. Such land usually requires rough leveling before any checking is undertaken, and it should be plowed before the preliminary leveling is done. If not, the filling up of the low spots by the leveling process will prevent the plow from reaching the plowpan or the hard crust of the original surface, and so one principal object of the plowing will fail of effect in such spots.

As an ideal proposition, even where the land is smooth enough so that no preliminary leveling is needed before checking, it is still desirable to plow first, because if plowing is not done until after checking, the ground under the levees will remain largely unbroken. Notwithstanding this fact, the writer has advocated plowing after checking, as a practical measure.

(To Be Continued.)

Bessie and Bertie were at a loss for a game to play. "Oh, let's play being 'at home' and have 'day', suggested Bessie. "'A day?'" queried Bertie. "What does that mean?" "Why, don't you know?" said Bessie, wisely. "All the fashionable people have 'days.' God's day is Sunday, and mother's is Tuesday."

Orange Tree
GROWN IN
BEET SUGAR LIME

Pruned back to bud. The growth shown above has been made in one year.

CONTAINS PLANT-FOOD
(Nitrogen, Phos. Acid and Potash)

VALUE OF $2.64 PER TON—in addition to lime carbonate.

Lime carbonate makes available the fertilizer native in the soil.

Overcomes Hard Pan.
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INCREASES CROPS.

Oranges, Lemons, Walnuts, Deciduous Fruits, Alfalfa, Celery and General Farming.

Write for further information and prices.

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Factories: Chino, Huntington Beach, Anaheim, New Delhi.

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We have a magnificent stock of citrus trees in all varieties.

ORANGES,
LEMONS,
also a fine stock of
OLIVES

and invite your inspection and inquiries.

We have also growing a full line of DECIDUOUS FRUIT AND ORNAMENTAL TREES, PLANTS, VINES, ETC. Our stock being all grown in the choicest spots in California—under perfect soil and climatic conditions—insures its being strong and thrifty and giving best results.

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Descriptive Price List covering all varieties of trees and plants will be ready about December 1st. Shall we send you a copy when ready?

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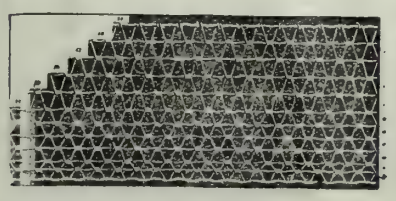

STRONG Because it is made of large High Carbon Steel Wires.

DURABLE Because it is double galvanized and all wires interwoven and securely locked at each intersection.

CHEAP Because it is sold by actual weight at DIRECT FACTORY PRICES.

Write for catalogue and price list.

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FARMOGERM

is the trade name of the most practical and reliable culture of bacteria, and its application will not only supply deficient soil with nitrogen, but increase the tonnage of the crops a hundredfold and more.

Without and With Farmogerm Inoculation
Drawn from photographs of Alfalfa in adjoining fields.

ALFALFA PEAS CLOVERS
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SWEET PEAS ALL OTHER LEGUMES

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means more than merely a live tree or plant. It means more than a good root or a good top. It means nursery goods with the best efforts, best knowledge and best brains of the grower back of it, to insure the planter highest results. Our stock is that kind. We stand and are known for quality in Nursery Stock and for service to our customers.

Our specialties are Deciduous Trees, Fig Trees, Grape Vines and Hardy Ornamentals.

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IS THE FERTILIZER TO USE IN CALIFORNIA

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JOHN ZUUR, Prop., Santa Rosa, Cal.
Ask for 1914 Catalogue.

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FOR CASH
PHOSPHATE FERTILIZE AND LIME
H. B. MATTHEWS, 733 Merchants Exchange Bldg., San Francisco.

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We are now offering for spring delivery—forage Robusta, Hemet, Melrose Special and Quilotta, Niagara, Gravity, fruiting. These are Burbank's improved standard varieties—send for catalogue and price list. Santa Rosa Spineless Cactus Farms, or J. I. Jewell, Santa Rosa, Cal.

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Just issued—a complete treatise on Date Growing; 300 pages, 40 illustrations. The only book published which gives a full, clear and practical account of growing the Date Palm. $2.00, postage 16c.

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SCIENTIFIC PRESS **PATENTS** PATENT AGENCY
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Circular containing 100 mechanical movements mailed free.

The Right Time For Dynamite.

[Written for the PACIFIC RURAL PRESS by JOHN A. GALPIN.]

There is a special time—a time best of all—for doing all things worth doing. With the fruit-grower there is a special time for cultivating his orchard to advantage, and if he is going to use dynamite the best time is the fall, or winter before the heavy rains have set in. That is when the trees are dormant, or least active in growth. And more than that, then is the time when the greatest good can be accomplished with the least dynamite, because the heat of summer has left the soil baked and dry, and under such conditions the shattering force of the blast extends much farther than when the soil is wet. And it is the exact time the soil should be shaken up—to prepare it for the trees before they begin the new season's growth.

For the rejuvenation of orchards, scientific farming has discovered nothing quite as effective as dynamite. At all times it is cheaper than hand labor, and oftentimes it accomplishes what cannot be done by any other method of cultivation. Years of surface cultivation usually results in the forming of a substratum impervious to air and water. It is within feeding distance of the tree roots. Its value is great, for it is practically virgin soil, rich in plant food. But all the good in it, and in the soil beneath, is locked up, and no amount of plowing, cultivating and irrigating will ever release it. Dynamite will. With such a condition to contend with, dynamite has proved invaluable to the orchardist.

Facts speak for themselves. Here are some that also speak for dynamite: The O'Connor prune orchard, near Los Gatos, in the Santa Clara valley, California, was dynamited last fall. During the previous six years the largest crop of prunes taken from this orchard was 3900 pounds. Last year, after dynamiting, the crop was 8000 pounds—more than double. It was a dry year, too, and the orchard was shy 95 trees. Where there were from 30 to 40% "drops" in the orchards on both sides, the O'Connor place lost only about 5% in drops. The prunes from the dynamited orchard averaged much larger in size, and the trees made a better growth and retained their foliage a month longer than the orchards on either side.

Throughout the fruit growing districts of California are men who have taken up orchard blasting as a profession. However, dynamiting is comparatively simple, and, following the directions supplied by powder manufacturers, many orchardists do the work themselves. Intelligence must be exercised to get favorable results as in any work of consequence. For instance, if the blasting has been of such nature as to throw feeding roots to the surface exposed to the air and sun, they should be immediately covered and the soil tamped down over them. And if many feeding roots have been broken by the shot it might be worth while to prune the tops of the trees in order to reduce the growth of the above-ground parts to correspond with the temporary decrease in the activities of the feeding roots. This decrease in the feeding power of the roots will be of short duration, for new feeding roots will be thrown out in the loosened soil, and they will be able to obtain more food than was possible before the blasting.

When orchards are in need of fertilization, it is an excellent practice to put the holes down deeper and load heavily enough to blow out a crater. This is filled with alternate layers of soil and well-rotted manure with telling results.

FOREST FIRE-PROTECTION FORCE INCREASED.

Reports compiled by District Forester DuBois on the number and classification of employees of the Forest Service in California show that a total of 884 people have been employed in protecting the National Forests during the present fire season. This is exclusive of the men employed temporarily in suppressing fires. Forty-four patrolmen were paid in whole or in part by lumber companies, counties, and other organizations co-operating with the Forest Service. The report shows the total number of employees to be 106 greater than for the corresponding period in the fire season of 1912.

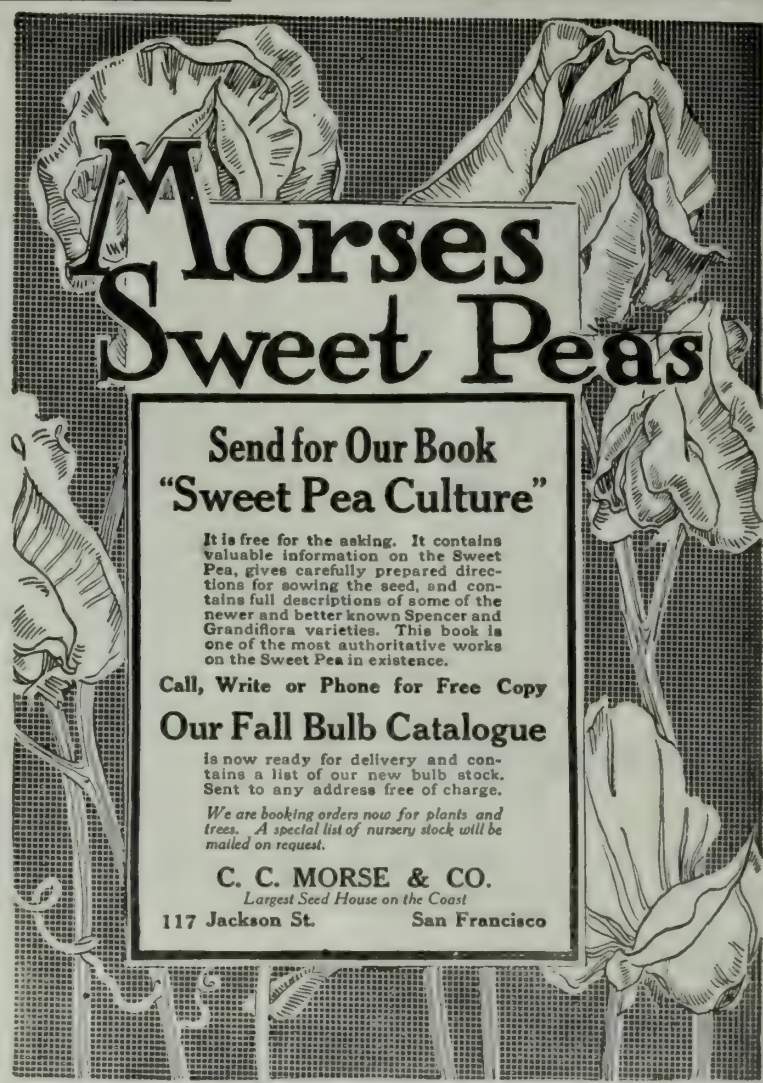
About 260 of this protective force will be retained during the winter as a nucleus of next season's fire protection forces and to handle the winter administration of the forests. The remainder will be furloughed at the close of the present fire season.

TOMATO WORMS FOR FISH BAIT

The boys' corn clubs, established by the Department of Agriculture, that have done so much to improve corn growing in the South, have been supplemented this year by girls' tomato clubs, which seem to have been equally successful.

One Georgia girl not only grew prize tomatoes, but sold enough of the greatest tomato pest, the "tomato worm," to fishermen for bait, to pay for working and harvesting her crop.

Two fishermen offered her one cent each for all tomato worms she would bring them. In one week she turned in over 500 and got more than $5. This she kept up all season and when the supply of worms became scarce on her patch, she went to work in her neighbors' fields.



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Millions of Dollars

are paid to fruit growers of California every year and still the fruit industry is in its infancy—An orchard planted to the proper varieties will produce

A Splendid Income

provided healthy, vigorous nursery stock is used. We have a fine assortment of first class deciduous and citrus fruit trees; also ornamental and shade trees and cordially invite your inspection.
Call and talk it over with us, or write for our 1913-14 catalogue.

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As a fertilizer contains Nitrogen, Phosphoric A[illegible] [illegible]otash, creates Humus, is a soil corrector and will assimilate any fertiliz[illegible] [illegible]ent that may be contained in the soil. To insure prompt delivery, book [illegible]rder at once. Write or call on us.
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If you are interested in new and better strawberries, unlike anything you have had before, write to Etter and get his booklet on strawberries he has originated and strong testimonials corroborating his statements.

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25% cheaper.
Send for pamphlet and analysis.
SAN FRANCISCO DISPOSAL CO.,
Evans Ave. and Keith St., San Francisco.

Rational View of Agricultural Credit.

A very calm and dispassionate, and therefore a view which should receive careful consideration, is expressed in the Northwest Horticulturist in this way:

The three or five year mortgage given by the farmers in this country is about the worst system known to civilization. The mortgage written at 7 per cent means, with cost of inspection, commission, and filing of the papers, about 10 per cent, and to some of the small farmers who are most in need of borrowing the rate has been yet higher. With the loss of a crop or two, or with illness in the family, the American farmer, if able to redeem at all, is carrying a burden much greater than necessary, simply because his rural financing system is crude and antiquated.

The remedy is for farmers to get together and themselves work out their own system. There is money enough in the hands of prosperous farmers in this country to supply the needs of their brother farmers who must borrow, and with a proper system the interest rate and time for repayment can and would be arranged to suit conditions.

In many instances the money lying idle in the banks of our cities could be made available for short time loans to farmers at the same rate merchants are paying, but for lack of correct methods and any kind of system in the farming community it is impracticable. In a district where, for instance, dairying is a leading occupation and the farmers are raising or buying the kind of cows which yield some measure of profit above value of feed, where they have put in modern equipment, at correct cost, saving both time and labor and where their acres are yielding at least average crops, there banks can safely advance accommodations in the way of short time loans at the commercial rate of interest, and this is most easily carried out where groups of farmers work along the same lines.

The same principles apply to poultry raising and to fruit growing communities. But farmers are capable of taking a step far in advance of this. They can organize their own system for loaning and borrowing in a way which will be perfectly safe, and that is likely to be the outcome of the agitation, the publicity and the investigaion going on for the past year. In fact, the European farmers themselves created and adopted the rural financial systems now in practice with them. In this country farmers are much more independent, and when the proper system of rural financing is adopted it is safe to say that many of the city cousins now seeking safe investments will come to the farmers offering to take their securities whether for short or for long time, at a rate of interest satisfactory and fair to both the borrower and the lender.

MAKING A MOVABLE FENCE.

To the Editor: In your issue of November 8, page 437, under the heading "Sheep in Orchard" your subscriber speaks of a removable fence. Can you give me the names of firms in San Francisco or Sacramento who make or sell that kind of a fence?—Orchardist, Colfax.

So far as we know there is no company in this State that makes the kind of a fence that you speak of, but we have seen what was called a movable fence that was home made which was used for enclosing small hog pastures and think very probably "Subscriber" had a similar one in mind. These fences are made out of panels from 12 to 18 feet in length according to the needs. Good one by threes or fours are used for the running boards and two by fours for the post, upon which the boards are nailed. The one in mind was about three feet high being used for a temporary hog pasture. As a support a triangular bracket three feet high and about the same length at the bottom made out of two by fours was used. After putting the panels in an upright position the brace was set on the outside at the joining place of the two panels, in that way the panel was supported at both ends, being fastened to the brace with baling wire. Iron or wooden stakes were driven inside of the fence at the intersection of the panels and also at the back of the brace on the outside to anchor it.

The only advantage so far as we can see of such a fence is that large or small pens can easily be made where the permanent fence would not be wanted.

A MAN'S LOVE.

"Say, when I step on her tail and give this old chump chariot the gas I go so fast the telephone poles along the side of the road look like a picket fence."

"Oh, I get about 19 miles out of a gallon on a good road, but mine is the only car in this man's town that will do it."

"Whenever I see a friend on the street I pick him up and give him a ride."

"I haven't got any electric lights, self-starter, cigar lighter, curling irons or fireless cooker in my car, but I have got an engine, believe me. I can go up a hill faster than any other car in this town can go down hill. The last motor cop who chased me didn't look any bigger than a microbe on a flea's hind leg when I looked back three minutes after the race started."

"Notice her take the corners? Some boat, what?"

"You ought to see her when she is running right. The differential is crossed with the brake beam now. That makes the little noise you notice."

"If anybody should come to me right now and offer me $500 more for this wagon than I paid for it I would say: 'Friend, this automobile is not for sale.' Just to show you how much I think of this car, I would rather get stuck in the mud in this car and stay there all day than to ride on a dry pavement in any other car made."

PROFITS
ORCHARD CANNING

One grower made a profit of $441.82 on 887 dozen cans 3-lb. tomatoes—results obtained from 2½ acres.

Why not you?

Name .....
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Factory No. 1 price $130.00.
Capacity 2000 to 5000 daily.

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We will make, without charge, the analysis of any soil a customer may send us, and give full advice as to what are its needs in the way of a fertilizer.

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Fruit Trees! Fruit Trees!

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Write and get our prices. You will find them as reasonable as any, considering the quality. Remember a cheap tree is dear at any price.

CHICO NURSERY CO.
Phone 170. Cor. First and Cedar Sts., Chico, Cal.

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ESTABLISHED 1884.

Offers the following varieties in strictly No. 1 Trees: 25,000 Bartlett Pear, 10,000 Apple (leading varieties), Autumn and Winter Pear, also Plum, Prune, Peach, Apricot and Almond Trees, Grape Vines, Ornamentals, etc. Price List on application.

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Martinez, Cal.

TREES—UNIRRIGATED TREES

Hardy, clean, pure, reliable French Prune, Bartlett Pear, Peaches, Apples, Cherry, Almond and Grafted Walnuts on Calif. Black.

Write or wire us your wants. Special prices for large orders.

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It will interest you.

IT DESCRIBES
Fruit Trees, Nut Trees, including Budded and Grafted Walnuts, Walnut Seedlings.

An immense stock of
ORNAMENTALS
of native growth and whatever is best adapted to California conditions, for Town Lots, Avenues or Parking.

NEW IMPORTATIONS
of Fruit Trees and Ornamental Stock.
Don't forget our Pedigreed French Prune Trees and our Pedigreen Blenheim Apricot.

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WRITE FOR PRICE LIST
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NEWCASTLE, CAL.

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CLAREMONT NURSERIES, INC.,
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You can be sure of absolute protection at small cost and get immediate delivery if you order this simple heater—

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One Man Can Light One Hundred "Bolton" Heaters in Five Minutes—

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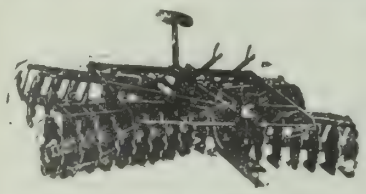

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AGRICULTURAL REVIEW.

Fruit and Grape Notes.

The wine growers of the State are preparing to take a number of moving pictures for their exhibit at the Panama-Pacific Exposition.

The Cured Fruit Association at Santa Rosa is packing fancy prunes in 10-pound packages to be shipped East by parcel post.

A new olive-oil mill is being installed by J. G. Curtis, of Pentz, on his ranch near that place. The crop in that district is said to be good this year as well as the orange crop.

It is said that the Arkelian Bros. are underselling the Associated Raisin Co. with Feherzagos, which they put on the market as first-class goods.

A total of 1723 tons of wine grapes was crushed by the French-American Wine Co. at the Ukiah plant this year. The percentage of sugar was very good, and the grapes were of fairly good quality.

Earle Mills, County Horticultural Commissioner of Butte county, reports that there have been more trees planted this year than ever before in the history of the county. The heaviest planting was to almonds.

The olive crop on the Merryman ranch near Lemon Cove is said to be the largest ever grown on that place. All of the other fruit is extra good this year, and it is claimed that the ranch is now on a paying basis.

The California Viticultural Commission is to keep a list of growers and shippers of table grapes as a means to prevent shipments of unripe fruit.

The sweet wine output of the State this season was more than 2,700,000,000 gallons, against slightly more than 2,000,000,000 gallons the season before.

Heavy planting of fruit trees is in prospect in Santa Clara county, according to Commissioner Morris. The order of popularity is: prunes, apricots, apples, pears, peaches, and walnuts.

Commissioner Schell of Fresno is out with the advice not to spray trees unless the need is seen for it. Commissioner Schulz of Tulare is urging all peach and apricot growers to spray against blight. According to past experience, the latter has the best of the argument, as some diseases do not show up until too late to spray.

The Associated Raisin Co. has received from growers practically the entire crop of 50,000 tons, showing the yield to be 40% short. Over $3,000,000 has been paid for raisins and heavy sales made.

The Bloomington Fruit Association, San Bernardino county, began shipping oranges before November 18.

The receipts of the Anaheim Fruit Association were $261,000 this season, as against $110,000 last. The membership is 130, a gain of 40.

The Santa Fe has ordered 900 refrigerator cars for California fruit and vegetable shipments.

According to estimates made by G. P. Harold Powell, the orange crop of the State this year will be about 40,000 cars. Prices are expected to be at least normal.

W. J. Lee, of Jacksonville, Florida, is in the Porterville district studying the California methods of handling fruit. He states that Florida will have a good crop of oranges this year.

A large acreage of Eureka lemons is to be planted in Santa Barbara county this year, according to advices from that section.

It is believed that the orange crop from the Porterville section will grade nearly 95% highest grade. None of the oranges are marked with thrips this year, which is unusual.

At the present time it looks as if this year's shipments of green fruit will only fall a little short of last year's total shipments, there having been 13,074 cars this season, as against 13,178 last year.

In County Horticultural Commissioner George Weatherby's report of conditions in Humboldt county, he states that there has been an exceptionally heavy planting of deciduous fruit trees the past year.

An organization of dried peach growers to be run on the same plan as the Associated Raisin Co. is being started in Fresno and Kings counties. It is said that $70,000 has already been subscribed.

Walnut Grower Uses the Parcel Post.

Knute B. Norswing, of El Rancho del Oro, Fullerton, writes that he is meeting with considerable success in selling his walnuts, put up in 10-pound packages and sending them by parcel post or express at little cost. Mr. Norswing had a lot of post cards printed which tell just what he has to sell and the prices as well as the cost of delivery. He obtained from the telephone directory from the towns he wished to send his product the names of prospective patrons, to whom he sent the cards. These cards bring lots of inquiries and orders. He also advertised in other ways that he would send a 10-pound package of walnuts at a price a trifle above the wholesale figures set by the Walnut Growers' Association, plus the cost of parcel post or express delivery. To show us how his walnuts are packed, he sent us a 10-pound package of nuts, which arrived in good shape and very quickly. He had the package designed and made especially for him by R. W. Pridham, a paper-box manufacturer of Los Angeles. The cases are made of corrugated paper of light weight, but capable of containing the 10 pounds allotted to them satisfactorily. The boxes eliminate the excess weight contained in a wooden box and are without the constitutional weaknesses so often exhibited by sack-cloth bags. The bags are easily ripped open along their seams, permitting theft of the contents. According to the manufacturers of the boxes, any attempt to take nuts from the corrugated paper boxes can be discovered; thus short weight can easily be detected by the consumer to whom a package of nuts is shipped. It would seem that the farmers have a fine opportunity to sell their produce direct, and we are pleased to learn that Mr. Norswing is making a success of his venture.

Horticultural Report.

Horticultural Commissioner R. S. Vaile of Ventura has issued his anual report in booklet form which contains matter that should interest all citrus men. Since October 1, 1912, 68,206 lemon and 14,266 orange trees were imported in addition to many walnut, apricot and other deciduous or ornamental trees. A normal crop is expected for the coming year, as trees injured by frost have recovered nicely and other trees are in fine shape. The report discusses the leading insect pests and diseases on Ventura crop. The greatest expense in control is on black scale, for which $35,000 is spent per year, $10,000 damage being done. Bean wireworm does $25,000 damage, as does armillaria. Walnut aphis, blight and gummosis do $10,000 to $15,000 damage each, estimated. During the year 2525 acres have been planted to fruit, walnuts, lemons and apricots leading.

Irrigation Work Outlined.

A systematic outline of work on the irrigation development of the San Joaquin was prepared at the meeting of the San Joaquin Water Problems Association held in Merced on Monday, and the association divided into sections to look after each

What's in the Soil?

There's nitrogen, phosphoric acid and potash in your soil. Every pound of butter, bushel of wheat, sack of potatoes or bale of hay you produce and ship elsewhere, takes some of these soil elements away. Every horse, cow, sheep or hog that you sell also carries away a certain quantity of these same vital elements. Each crop produced eats up some of the raw materials in the soil.

You must have those raw materials or you can't go on producing. You must replace the vital elements taken away by the crops or live stock, else you get poor crops and no profit for your labor.

Science has discovered how to replace those elements, what to put into the soil to make it continue to produce profitably. It is simply to put back what was taken from it.

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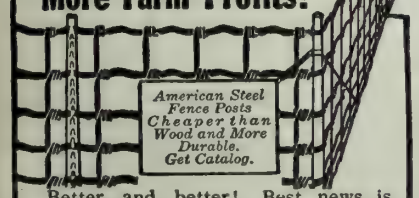

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line of work. Among the work done will be keeping in close touch with the irrigation and navigation survey of the San Joaquin river so as to help in selecting reservoir sites and other such work related to irrigation and conservation. Another division will ascertain the new policy of the Department of the Interior in aiding irrigation in arid districts. Another divison will develop support for the Newlands bill for the construction of storage reservoirs on rivers used for irrigation. A committee will also investigate underground water supplies and the cost of pumping, including rates of various electric power companies. The proposition of State support for financing irrigation districts was strongly supported, and a protest made against the diversion of water from the San Joaquin valley. The association will keep in touch with the State Reclamation Board and endorsed the water commission bill, held up by referendum. The next meeting will be held February 22 at Bakersfield, to be followed by a meeting early in September.

Irrigation Progress.

Water users of the Consolidated Canal Co. of Fresno have come out in favor of the pro rata rather than the rotation method of delivering water.

The ditch system of the South Feather Land & Water Co., of Butte county, will be completely rehabilitated.

An artesian well flowing 200 gallons per minute has been struck on the Nesmith ranch in Smiths valley, Douglas county, Nevada.

Congress is to be asked to appropriate $5,000,000 to bring water from the Klamath river to irrigate 100,000 acres of land near Montague, Siskiyou county.

Miscellaneous and General.

The Fairview Farmers' Association of Glenn county is planning co-operative purchase and ownership of expensive farm machinery like tractors which individual owners of small acreages could not buy.

The University of Arizona is to hold a two weeks' short course in agriculture at Tucson, January 5 to 17.

Stanislaus county farmers have begun a campaign to secure a county farm adviser.

A protest against a proposed increase in rates on vegetables and fresh fruits to Nevada will be heard in Sacramento December 8 and 13.

The report of the Sacramento Valley Cereal Association shows that no rice variety on the experiment farm yielded below 4500 pounds per acre, and some went 6000 pounds.

Excellent success has been had with the tepary bean in the Coachella valley this year.

L. H. Umstead, who is promoting the growing of Turkish tobacco in Tulare county, states that 1000 acres of this crop are being grown between Exeter and Fresno and that 300,000 pounds will be cured and shipped this fall.

The contest of boys and girls in growing lima beans in Ventura county has been such a great success that it will be conducted on a much larger scale next year.

The sugar mill at Fallon, Nevada, sliced 1204 tons of beets in the first five days of the season, as compared with 467 tons for an equal period last year. The sugar content has run about 16 per cent.

The Santa Ana Co-operative Sugar Co., Orange county, sliced 91,000 tons of beets this season. The Anaheim factory will have 60,000 tons and the Los Alamitos factory 72,000 tons. The sugar content of the beets ran a little less than usual.

The 25-acre farm belonging to F. N. Davis, of Princeton, Glenn county, was sold recently for $400 an acre.

The 720-acre stock ranch known as the "Last Chance," in Shasta county, was purchased by J. D. Aldridge, who will add it to his Bonnie Craigs ranch on Snow creek.

Owners of the Wocus marsh, near Klamath Falls, Oregon, are planning on reclaiming it by diking the whole tract.

FOR SOME SKIN TROUBLES.

I would like to give you a remedy for certain skin diseases in horse or man. Have tried it, and it is grand. Take equal parts of cream of tartar and sulphur, give one teaspoonful in bran mash night and morning for two weeks, stop one week and repeat if necessary.—W. S., Healdsburg.

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Oroville, Nov. 14, 1913.
Mr. R. R. SNOWDEN,
Los Angeles, Cal.
Dear Sir—About a year ago you made an analysis of soil from my orange grove. I am so well pleased with the results that I want you to instruct me what to use for the next crop. My crop this year is the best the grove has ever had; in fact the best in this section and my fruit was the first to color. I will gladly pay you for the advice.
Yours truly,
(Signed) G. M. SPARKS.

Echoes of the Dairy Convention.

[By the Associate Editor.]

When dairymen meet and chat about business they tell some interesting things, and the convention at Tulare of the dairymen and creamerymen was more than anything else a talk about dairying. The few little points that follow are things that were picked up there in addresses by speakers on the program and by dairymen in discussion.

The New Zealand Butter.—The new tariff law has made a change that is of big interest just now to dairymen, having reduced the tax on imported butter to a nominal amount. The result is that New Zealand and Australian butter has been coming into the country in good quantity through San Francisco, and naturally hits California hardest. California butter dropped a couple of cents when it arrived here. S. H. Greene and W. H. Roussell gave some interesting facts about this subject.

Now the New Zealand butter is just what butter ought to be. The government down there promotes the dairy interests by seeing that no poor cream is produced, or used if it is produced. The dairyman has to make hog feed of it. The good cream has to be manufactured in the right way for the next step, and the butter is a thing to be proud of. It costs more to get good butter, but the prices are so excellent that this has boomed the industry. It is a lesson to California. Get strict, sensible State inspection and regulation, let only good cream be used, good creamery operations continue, and prices will go up strongly.

This butter, after its long trip in cold storage, should go on the market as cold-storage extras, but its superiority over the ordinary California butter almost puts it on the same basis with fresh extra butter. Its price would be very much lower if fresh California butter were made of as fine a quality as this and competition from it would be small. Anyhow, the amount of this that will come in is limited, it will only arrive in our winter and their early summer, and the effect will be a very slight lowering of our markets and very much more uniform quotations during the period of importation.

The Tuberculosis Question.—Dr. C. M. Haring, of the University of California, gave a talk on tuberculosis of cattle that was highly appreciated. The subject in a way was the relation of the university to dairymen on this matter, though Dr. Haring rather represented the scientific and official attitude all along the line. The crowning point of the idea was that no more was there to be warfare between dairyman and official on tuberculosis, for the dairymen have carried their point entirely: the subject is now, by authorities that know what they are doing, to be approached from the dairyman's viewpoint, not the viewpoint of the public health alone. The audience seemed to be in as much sympathy with the idea as the speaker, so evidently he hit the nail on the head.

Just what the dairyman should do about tuberculosis, however, we don't seem to discover. As the Rural Press has frequently said, the scientists have not found a practical way of handling tuberculosis yet. We could not see that Dr. Haring made any definite suggestions to dairymen, although the plan in which the essential point is to remove all cows found by physical examination to have the disease, using the tuberculin test rather incidentally, is one of the most promising methods of the best investigators now. Something at least has to be done, for the disease is continuing to get worse in California.

High praise, by the way, came from the convention floor for the ability of the dairyman to learn to do testing. More later perhaps.

Silage and Feeding.—One fine thing was the way the silo idea has caught. Some people on the program were absent and the convention tackled the subject of feeding, and they could talk of nothing but silos and such, unless they switched from this subject to pure-bred stock. Everybody seems to have a silo or to be planning one. They agreed that it was the next best thing to green pasture for milk, and as a matter of sense and finance it is far superior to pasture. One speaker said that he found by actual practice when he had to be careful of his alfalfa hay, that one ton of corn silage equaled a ton of alfalfa hay, that is, when fed with hay. All agreed with him. They said that the corn could be put into the silo for $1 per ton, so there is big money in growing corn for silage. One dairyman told just how he built a silo. It would hold 225 tons and cost $185 to build, the lumber costing $117.15 and labor the rest.

Another dairyman told how he put a crop of Egyptian corn into his silo and when he had not enough, he finished it out with milo and both were dandy. I. D. Graham, chief of the department of live stock of the 1915 Exposition, came along with a hearty recommendation of kafir, so both corn and the grain sorghums as silage found lots of friends. Another dairyman told how satisfactory foxtail and alfalfa was as silage. There is no doubt but what the silo has come to stay, and Indian and other corn are to be raised for it. Good feeding has to be done if there is going to be good milk production.

Breeding the Start.—There could not be anything new said about good breding, that is, pure-bred sires and such. Everybody said without question that pure-bred sires and good cows was the most important single thing about dairying. Still they said that all dairymen, after looking over the young bulls on a pure-bred ranch would say, "Have you got any good grade bulls I can look at?" Ugh! Can you beat it! It hits the nail on the head—$100 cows and $30 bulls. The man that does win out is the man that has pure-bred sires all the time. That is what nearly all of the successful dairymen have, and most of them before long want pure-bred cows, too.

Well, the first and easiest step in remedying the grade bull proposition is to buy the four or five-year-old bull that another dairyman sells to prevent inbreeding. All pure-bred dairymen would like to see that done, and the only dairyman in the convention who disapproved of the plan did so because old bulls in a new place were breaking fences all the time, and he advised building a strong bull pen and then you could buy the used pure-bred bull for a very little price and have a good animal, one that is a proved breeder at the height of his vigor, not a young, unproved animal of poor breeding. Why, you pay about $30 for a scrub anyway, and only have a scrub. You could get a four-year-old pure-bred for $20 over beef prices, and sell him for beef after you are through with him; total cost, his keep and $20; and you have pure-bred instead of scrub. Few of these used pure-bred bulls can find a second owner, but nobody can find any easier money than to buy them. It has all been said before, but we have to hammer away.

Test Your Cows.—Good feed and good breeding and the battle is half won. The finishing touches are put on pretty near with testing the cows for butter-fat. Now Tulare is in the centre of an awfully progressive dairy district. The breeding standard is high, the dairy equipment and methods are high, quality noted, and there is everything in sight in dairy organizations except perhaps bull associations, and we don't know about that. They have a very flourishing cow-testing association containing between 800 and 900 cows. Yet there are 11,000 cows outside of the association and less than 900 in, and Tulare a progressive dairy district and cow-testing an essential point of wise dairying! Can you beat that for an illustration of California dairy progress.

This also is an old story, and there is no use saying anything more about it. And, just on the side, although the Tulare Cow Testing Association is now a proved success, has a big waiting list, and may have to employ two testers next year, it nearly died at the close of the first year, so even the owners of the 900 tested cows have nothing to boast of on their love of advanced methods.

Well, the whole convention cannot be put in a couple of columns, and the preceding are just a few interesting things brought up. It will pay any dairyman who can to come to the next convention at Modesto, meet a lot of live dairymen and get all the good points. To do what the associations have started to do requires a strong, vigorous organization, and this is what the dairymen now have.

VETERINARY CONSULTATION.

Chronic Bronchitis.

To the Editor: Some two weeks ago I bought a young hog weighing about 80 pounds to fatten for my own meat. I took it from a bunch of about six that were being stall fed, rolled barley being used principally, I think. At the time, I noticed one or two of the others cough, but thought nothing of it until later I noticed the one I bought was doing the same. The hog has a good appetite and seems to be always hungry, but the cough which at first was a kind of wheeze is getting harder. I am feeding cooked pumpkin with bran, milk, slops from the kitchen and some kaffir corn. There has been no cholera in the community. I would like to know the trouble, and how to treat it.—L. E. C. Paradise.

ANSWER BY DR. CHAS. C. WING.

The hog mentioned has chronic bronchitis, which is contagious to other hogs. Stop feeding the corn, as it is irritating to the throat and mucous membranes. Use the following, to be filled at a drug store:

Oil of tar, ½ ounce.
Guiacol, ½ dram.
Fluid extract of belladonna, 1 ounce.
Add enough neutral oil to make 12 ounce.
Mix and give two tablespoonfuls every three hours.

San Francisco Veterinary College.

Breeding Ailing Sow.

To the Editor: I have a sow that seems to be troubled the same as the one asked about by E. F. S., Napa, Cal., in the Rural Press of April 12, 1913. I gave her oil and she seems to be improving. When she walks her hind legs insist on crossing. If she gets well, would it be safe to breed her again? I weaned her eleven pigs as soon as I noticed her condition, about two weeks ago. She will be two years old next May. —C. A. C., Lincoln.

ANSWER BY DR. E. J. CREELY.

If she shows no sign of the ailment she can be bred again.

San Francisco Veterinary College.

Fluke.

To the Editor: I have a seven-months-old Holstein heifer that has a sweat almost every evening; she is in good order and has an unusual appetite. What can I do for her?—A Subscriber, Los Molinos.

ANSWER BY DR. CHAS. C. WING.

The heifer might be infested with Distoma hepaticum (liver fluke), or have chronic hepatitis. Give a pound dose of Glauber's salts and report developments.

San Francisco Veterinary College.

Chronic Diarrhoea.

To the Editor: I have a mare four years old and I cannot get her fat; she is always poor and bony. I feed her plenty of oat hay, the same as I do my other horses, which all look fine, and barley when she works. Her bowels always seem loose; whenever she has a passage some fluid comes first, also some fluid comes first when she passes wind. If you would kindly advise me through your valuable paper what to do for her I would be very thankful to you.—Reader, Roseville.

ANSWER BY DR. CHAS. C. WING.

Chronic diarrhoea may be due to improper mastication. Have the teeth examined by a licensed veterinarian. Mix grain with one-fourth amount of dry bran so the animal cannot bolt the feed.

San Francisco Veterinary College.

Weak Ankles of Mare.

To the Editor: I have a mare eight years old that is weak in the hind ankles; that is, she knuckles under, sometimes every mile or so. I have been driving her every other day from 20 to 30 miles, for three years. During the past two years I noticed that she seemed to be worse during the month of February than at any other time, but at present she is about as bad as she was last February. At times she will go for several weeks with little or no indication of this weakness. She has a fine appetite, but is not in good flesh. Spirits good, but urine is off color,

and there are indications of kidney trouble. Last spring she would frequently raise one hind foot three or four inches from the ground, for a minute or two, and then change to the other. Can anything be done to overcome the knuckling under habit?—E. E. W.

ANSWER BY DR. CHAS. C. WING.

The horse's ankles are weak. The lifting of the legs could be due to several causes: lamanitis, muscular rheumatism, influenza, or innumerable things. Would advise consulting a veterinarian.
San Francisco Veterinary College.

Draft Horse Society Desirable.

To the Editor: Why is the draft horse so much neglected in our farm papers? It is a subject in which nearly every farmer is interested, and there is no branch of animal industry that is more profitable than raising draft horses in connection with other branches of farming, if it is done intelligently.

At the present time a good four-year-old steer is worth about seven cents per pound, and a good four-year-old draft horse is worth 20 cents per pound. When you remember that the mare which produces the colt will earn her own living and the colt will do the same after three years old, you must admit that there is much more profit in the horse than in the steer, even at the present high price of beef.

The value of the horses of the United States exceeds that of all other kinds of live stock combined, and there is fully as great a need for education in this branch of animal industry as in any other. This is clearly proven by the ease with which very inferior stallions are sold at big prices, frequently without any examination whatever, and yet in our farm papers and at our colleges the horse business is comparatively neglected. At our University Farm, on which hundreds of thousands of dollars have been spent, there is not one good draft horse, and yet it is quite as important to increase the efficiency of the horses that till the ground and move the crops as it is to improve the dairy cattle or the hogs (for if we feed three horses when two could do the work, we are wasting feed which might produce beef), and there is no doubt that the efficiency of the horse can be increased by more intelligent breeding.

Much could be done by a Draft Horse Breeders' Association.

HENRY WHEATLEY.

Salvador Stock Farm, Napa.

To the Editor: Horse breeders ready to organize, kindly notify the PACIFIC RURAL PRESS and we will arrange the meeting.

Noting Mr. Henry Wheatley's letter to the PACIFIC RURAL PRESS of November 8th, I differ somewhat from his opinions as to a judge's capability.

If Rule 22 of the State Fair premium list is adhered to and the judge be a specialist in the class in which he serves, he ought to be able to get around a class of horses and see almost through them in quick order.

But before I go further, I will state that I don't believe the judge is born capable of adjusting premiums on all breeds of horses and cattle. I would compare him to the man who was "Jack of all trades," but good at none.

Another suggestion I would make to the Board of Directors would be that they adhere to the three-judge system; it is easier for one man to make a mistake than three would be liable to, and much harder for the unscrupulous exhibitor to square three men than one man.

We have many a good judge of the horse right in this vicinity. Did you ever stop to think that in San Francisco there are many extensive users of truck horses that buy their own stock and it is seldom that they take along a veterinary? I could mention quite a bunch, and I know they are valuable men at the business and carefully look for the things they don't need, and I'll bet a whistler don't get by them, saying nothing of a "roarer." Probably some of this blood infused into our State Fairs might be good.

Again, can you call to mind any farmer or prominent horseman living anywhere in the country in this State who would not be a capable man? If not, we can name quite a few; and don't forget quite a number, and more probably all, have been "through the mill," from whence they had some good facts instilled into their minds.

Where do the older countries get their judges, and where is that great stock-raising district of Buenos Ayres picking up her information? We are none too old to be educated in California, but it does look like we were easy.

If you don't notify the RURAL PRESS, drop me a card as to your willingness to organize in a Draft Horse Breeders' Association, and I will promise you every spare moment of my time in the welfare and a many a co-worker's at my call.

Do let us hand down something to our boys, and it may still be a pleasure to many of us.

The good stuff is worth feeding.

Newark. WM. BOND.

[The needs for a California Draft Horse Breeders' Association are apparent and pressing, and the sentiment in favor of organization is strong. Send us word that you wish to help organize such an association (or write to Mr. Bond as he suggests) and we will take the matter up with Mr. Bond, Henry Wheatley, and others who desire such an organization and help put the thing on its feet. The thing is coming; better be in at the start.—EDITOR.]

A LUCKY COW.

To the Editor: Will you give me your opinion on this cow? Second calf was born October 8; have made 30½ pounds of butter, saving the cream from October 18 to November 15 (not including cream of November 14), five churnings. She gives between 3 and 3¼ gallons per day, 3 pints scant measure being reserved at night's milking for breakfast cream. Balance of milk stands for skimming. Skim-milk is fed to calf with addition of flaxseed meal and millings. Calf is doing splendidly. We bought the cow just previous to freshening with first calf. She is always well fed, being given corn fodder, both green and dry, stock beets, alfalfa hay, some pasture with plenty of water, shade trees, and a little oat hay raised on premises. She is kept clean and not tied up at any time. Owner milks and cares for her entirely. Your paper is most helpful to beginners like us. Have only lived on an orchard farm two years. Read in an earlier issue on the best way to raise skim-milk calves, so tried it on this boy.

San Jose. Mrs. P. E. B.

[Our main opinion on the cow is that she is wonderfully lucky. An assortment of feeds such as she gets is always better than just one or two feeds, and the assortment given this one is excellently balanced and fine for condition, as is the care she is given. We are glad to hear of success with calf and that the RURAL PRESS is so appreciated. It is difficult to say just how much butter-fat the cow produces per day, as by the old way of skimming considerable fat is lost in the skim-milk. Likewise there is no way of telling offhand just how much fat is in the butter or how much is lost in the buttermilk, as this will vary with methods of making. However, would estimate that the cow was giving about a pound of fat per day, and that milk tested about 4% fat. She would average up well in a good dairy, though would say nothing more.—EDITOR.]

LABEL FOR COWS.

A troublesome thing for dairymen who weigh milk regularly or have other reasons for keeping definite track of individual cows, is to have some way whereby they can give each cow a number that will stick to preserve the identity of the animal. Branding, paint, hoof and horn marks, tattooing on the inside of the ear, ear tags, and such things all have serious disadvantages. At the dairymen's convention this matter was discussed. S. A. W. Carver, of Los Angeles, recommended the use of a label attached to a chain around the neck, which had proved superior to practically everything he tried. Tattoo marks in the ear were used to supplement this, so when the tag would be lost a new tag could be put on.

Another dairyman recommended the following, which looks exceptionally good. This is simply a small tag to be attached with a small ring, in the same way as a nose ring, to the line of skin on the flank near the udder. This does not bother the cow and will not be rubbed off. On one side of the tag can be put the number of the cow, on the reverse, name of dam, sire and date of calving.

FIG WASP FOR BEARING.

To the Editor: What must be done with a Smyrna fig to make it bear? We have one that has a good many small figs come on and before they get ripe they fall off. Some say that we will have to get a wasp to sting the figs before they would remain on and get ripe. We have only one tree. When is the best time to prune a six-year-old peach orchard?—J. B. C., Modesto.

[The people that spoke about the wasp are a little right, but only a little. A small wasp grows in wild or capri figs and in summer while the Smyrna figs are on the tree they go out of the fig they grew in and go into young figs to lay eggs. Smyrna fig growers put these capri figs in Smyrna trees and the wasps enter the Smyrna figs. They do not sting them at all, they simply carry pollen into the fig and that makes the seeds mature and the figs stay on and ripen. Smyrna figs will not stay on unless this is done. You should get some capri figs at the right time from some Smyrna fig grower or grow some yourself. Any nurseryman can sell you capri trees. Milco is about the best variety, if only one tree is grown, though an assortment is usually essential. If one has only a single Smyrna tree it might be possible to graft on some capri figs on the branches and the work would look after itself and space would be saved, though this is not to be advocated for orchards. Incidentally, it can be said that the wasp does not lay any eggs in the Smyrna fig. She goes out again when the finds it is the wrong kind of a fig. Peach trees can be pruned any time that the trees are dormant, that is, from the time that the leaves fall off in the autumn until the buds are ready to start in the spring.—EDITOR.]

SPRAYING FOR PEACH BLIGHT.

The spraying for peach blight, which should be done by peach growers in the Sacramento and San Joaquin valleys, and frequently by others also, during November or early December, can be done either with Bordeaux mixture or lime-sulphur. Bordeaux is most commonly used, although lime-sulphur is becoming more popular. This spraying and the one with lime-sulphur in the spring as buds are opening give a sure control of the blight, curl-leaf, and peach-twig borer, and are an absolute necessity if blight threatens. The presence of the disease can be observed in the form of black spots that appear on the young shoots during the winter, particularly at the buds. The buds are killed, together with much of the young growth or fruiting wood. During the spring rains a jelly-like gum exudes in large quantities from these dead spots.

THE BISMARCK APPLE.

To the Editor: Referring to inquiry about Bismarck apples in a recent issue. I fruited them in Sonoma county and at Ceres, Stanislaus county. They begin bearing quite young, the apple is large, is quite acid, a good cooker, and ripens early in the fall. I don't know how it would sell on the market; it should make a good filler; it is not necessary to put it on dwarf roots, as it is inclined to dwarf itself by heavy bearing; the apples are somewhat inclined to fall before being fully ripe.

Lancaster. T. J. TRUE.

With the Live Stock Men.

L. P. Denny of Kings county was a visitor to this office last week and stated that he expects to check and seed his ranch near Summit lake to alfalfa. There are 480 acres in the tract and he expects to start a large dairy on it next year.

A great many cattle are reported to have died in the Sierra valley recently from anthrax. Authorities at the University of California have been appealed to for a remedy.

A well known milk canner is said to be figuring on the erection of a goat milk condensary, to be located in Lake county. It is claimed that Lake county is especially adapted to goat raising and would be a profitable undertaking if some market could be opened.

The amount paid to Tulare county dairymen for the month of October was more than $7000 less than for the preceding month. The production was slightly smaller and the price was about three cents below that of the month before.

J. Manfrino of Willows recently returned from the southern part of the State, where he purchased a carload of dairy cattle.

There are in the neighborhood of 13,500 head of cattle in the Fort Jones district at this time. About 3800 of these have been brought in for winter feeding.

Prices for butter-fat at the Ferndale creameries for the past month ranged from 36 to 37¼ cents a pound.

During the past week 1000 head of beef cattle were shipped into the Carson valley, Nevada, by the Danberg Live Stock Co. The same company disposed of about 3000 head of sheep last week and expects to ship more during the month.

Nearly $85,000 was paid out to Fresno county dairymen by the creamery men during the past week for butter-fat received last month, 40 cents a pound being the price paid.

The University Farm at Davis is cooperating with the Western Meat Co. and with the Miller & Lux corporation in feeding experiments which are being carried out at Lovelock, Nevada, and at Gilroy, California.

A report from Santa Barbara states that there nas been sufficient rains in the Santa Ynez valley to give the soil a heavy soaking and as a result cattle men are confident of a good supply of feed.

Snowden Bros. of Los Angeles shipped a carload of mules and horses from Yolo county last week. This makes the sixth carload that this company has shipped from that district recently.

Close to $148,000 was paid out to Kings county dairymen last week for butter-fat for the month of October. This is about $3000 more than for the month of September.

V.C. Bryant of the College of Agriculture of the University of California gave a lecture on live stock each day at the Apple Annual held at Mendocino.

The Churchill Creamery, Inc., at Fallon, Nevada, have shipped in about 300 head of dairy cattle during the past six weeks. The creamery is now turning out two and a half tons of butter weekly and it is hoped that this amount will be materially increased in the future.

I. D. Graham, Assistant Chief of the Live Stock Department of the Panama Exposition, left last week for Chicago, where he will attend the International Live Stock Show.

The J. Gatgen ranch near Horncut, Yuba county, has been leased and will be run as a large dairy.

Among the live stock exhibits at the county fair held in Imperial county last week were some fine specimens of the mulefoot hogs owned by H. C. Terwilliger.

It is the intention of the owners to exhibit a steer, from the Klamath Falls district, that weigh 2460 pounds, at the Panama-Pacific Exposition.

The Los Angeles Health Board closed the sweet cream depot, owned by the Good Luck Creamery last week as the plant had not been inspected. It is thought that the company will comply with the rules and again open the plant in the near future.

An Italian attorney of Los Angeles states that the opening of the Panama canal will be the means of increasing Italian immigration, a great many of whom will go into the dairy business.

The Chico Civic Center is investigating the sanitation of dairies in that vicinity who sell milk to the city trade, and report that many of those visited were in very poor condition.

H. E. Cornwall of Modesto entered one of his prize winning Holsteins for the judging at the Farmers' Institute at Modesto last week.

A. E. Hall of Victor valley in the southern part of the State reports that he has had very good results with Sudan grass and thinks that it is particularly adapted to conditions in that district.

The rice acreage in the Sacramento valley will amount to 20,000 acres next year, according to some estimates.

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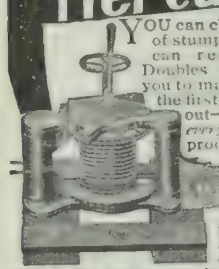

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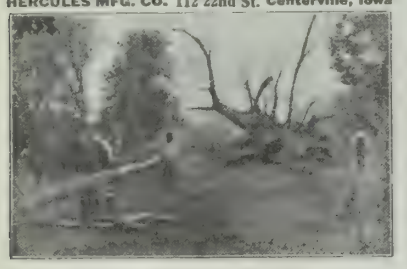

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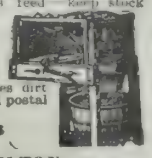

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SWINE.

POLAND-CHINAS FOR SALE—Still have six 8-month-old males and five 8-month gilts for sale. Two of these gilts first prize winners at the Fair this year; as well bred and as nice as are in the State. W. A. Young, Lodi, Cal.

REGISTERED DUROC JERSEY SWINE Some extra good young boars for sale, ready for service. Best Eastern strains. Ed E. Johnson, Turlock, Cal.

REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

EUCALYPTUS STOCK FARM—Registered Duroc Swine and Holsteins; prices right. A fine March bull calf for sale. J. K. Fraser, Denair, Cal.

REGISTERED BERKSHIRE BOARS, sired by Silver Tip Duke and Third Masterpiece. V. A. Peterson, Blacks Station, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

DUROC JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

FOR SALE—Pedigreed O. I. C Swine. Also a few pedigreed Duroc Jerseys. Jack London, Glen Ellen, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Prop.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

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FAIRVIEW STOCK FARM—Reg. Poland-China hogs. W. A. Young, Lodi.

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REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

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GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

REG. GUERNSEY CATTLE and Hampshire hogs, young stock for sale. Bella Vista Stock Farm, First Nat'l. Bank Bldg., Berkeley.

CHAS. L. LEONARD, Jacinto, Glenn Co.—Registered Jersey service bulls, sired by Gerties Lad, Gerties Son, and Melias Fox, for sale.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

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WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain, Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

K. W. ABBOTT, breeder of Holstein cattle. Stock for sale. Milpitas, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE OR TRADE—Registered Missouri jack, 5 years, 15.3 hands, sound, big and heavy boned; good colts to show. Want work stock, horses or mules. Address, Linden Stock Farm, Linden, Cal.

REGISTERED BLACK PERCHERON STALLION, three years old next April. Good individual; price reasonable. F. S. Israel, Linden, San Joaquin Co., Cal.

BIG BONED BREEDING JACKS for sale. Jas W McCord, Hanford

BEEF CATTLE.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

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MISCELLANEOUS.

FOR SALE OR TRADE—Four black registered Percheron stallions; fine individuals. Prices $750 to $1000 each. Will take in trade used horses if sound. Also some registered Short-horns on sale. Wm. Bond, Newark, Cal.

BRAE BOURNE RANCH—Berkshire hogs and Tri-color Collies. Young stock for sale. Mr. and Mrs. C. E. Rand, R. No. 3, Box 69, Santa Rosa, Cal.

FOR SALE—Bargain. Registered Guernsey bull. Young registered Berkshire boar. K. L. Evans, Gilroy, Cal.

FOR SALE—Purebred Berkshire pigs, Toulouse geese and Pekin drakes. L. R. McCoy, R. 1, Box 205, Stockton, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

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Breeders' Sales.

We wish to call the attention of pure-bred live stock breeders to this column. Sales of pure-bred stock of all kinds will be reported here, free of charge, providing we are supplied with the animal's name and registration number, buyer's name and address. Below are the sales reported to us for the past month:

DUROC JERSEY SWINE.

Linquist Bros, Turlock, sold to W. S. Rapp, Turlock, 2 brood sows; to P. Berg, 1 boar; to Pehrson Bros., Turlock, 1 boar; to A. B. Cate, Clovis, 1 boar.

J. K. Fraser, Denair, sold to Jack London, Glen Ellen, 2 bred sows; Chadwick and Sykes, San Francisco, 1 sow and 1 boar; Tagus Farm and Dairy Co., Tulare, 1 boar; J. P. Geary, Marshall, 1 boar; B. D. Mason, Berkeley, 1 sow; D. W. Hobson, Sacramento, 1 boar; Chas. T. Kipp, Spokane, Wash., 2 bred sows; Gus Grunnel, Alsie, Wash., 1 boar.

POLAND CHINA SWINE.

D. F. Conant, Modesto, sold to S. Menghette, Modesto, 1 boar.

JERSEY CATTLE.

The Royal Jersey Herd, Hanford, sold to N. H. Locke Co., Lockeford, heifer, Royal Lady Fox, 295266, and heifer Royal Foxy Bessie 295267.

Willowood Jersey Farm, Tulare, sold to C. E. Starr, Hanford, heifer out of Rioters Miss Gertrude; to C. H. Newton, bull Stratford out of Philadelphia's Glory Zella 198369; to R. L. Waltz, Hanford, bull calf same dam as above; to J. H. Frew, Tulare, bull calf out of Lotties Glory May 243213; to G. E. Gibb, Tipton, bull calf out of same dam as above; to A. A. Jenkins, Tulare, heifer calf out of Lady Burdette 2nd 215-826.

HOLSTEIN CATTLE.

T. J. Gilkerson, Lemoore, sold Stratford Johanna De Kol Segis 116513 to A. R. Hall, Riverdale. A. W. Morris & Sons, Woodland, sold to P. J. Van Loben Sels, Vorden Ranch, Vorden, Ollie R 3d 166881, Lady Sally 166883, Jessie Feldspar De Kol 163948, Queen Jewel Pontiac 157382, Edith Nell of Bemus Point 166882, Queen Daisy De Kol 3d 166878, Noontide Pondyke 152499, May Korndyke of Sleepy Hollow 136387, Creamcup Poybe 166613, Mercedes Korndyke De Kol Joanna 2d 170251; J. N. Craig, Kern, heifer Shirley De Kol Boon 159825, Egbert A. Smith, Napa, heifer Janet Pontiac Aaggie 166874; C. W. Jenkins, Live Oak, Jane Lewis Netherland 152088, Liza Jane Mechthilde 82921; Annie M. Alexander, Suisun, cow Josephine De Kol Parthenea 162332; D. L. W. Hoffman, Grand Island, bull Segis Pontiac Juliana 104097; Napa State Hospital, Napa, bull Model Riverside Prince 105272; Thos. J. Stephenson, Courtland, bull King Mead Colantha 87064; T. E. Losse, Rio Bonito, bull Lorena Korndyke 5th 116692; G. Niederhauser, San Bernadino, bull Pietertje Barber Mechthilde 112270; F. A. Yates, Calpella, bull Lorena Korndyke 4th 115-884; Joseph Hufford, Redding, bull Sir Mechthilde Concordia 112380.

AYSHIRES.

E. B. McFarland, San Mateo, sold to Brown & Brandon, Petaluma, one heifer calf, sired by Auchenbrain Good Gift 27259, Imp. dam Lochfergus Bangle 33317, Imp.; one bull calf (Canadian), sire Scotch Lad 29140, dam Molly of Whiteside 33319; one bull calf, sire Auchenbrain Good Gift 27259, Imp., dam Springbrook Majory 33316.

THE BEEF SCARCITY.

Unless there is an increase in the meat production in the United States in the next ten years, porterhouse steak will be selling at more than $1 a pound, according to Gustav Bischoff of St. Louis, president of the American Meat Packers' Association, which recently held its annual meeting in Chicago.

"If the production of cattle decreases in the same ratio and the population increases as it has, we will see the American workmen eating rice and potatoes, but no meat," he said.

Most of the hop crop at Ukiah recently sold at from 21¾ to 23 cents.

Warranted to Give Satisfaction.

Gombault's Caustic Balsam

Has Imitators But No Competitors.

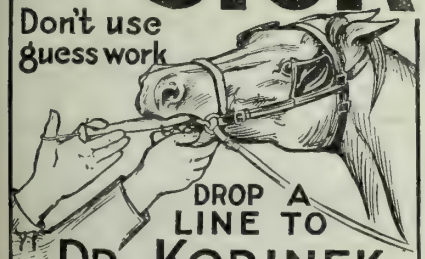
A Safe, Speedy and Positive Cure for Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a Human Remedy for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

The Lawrence-Williams Co., Cleveland, O.

When any of your STOCK are SICK

Don't use guess work



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In the meantime write for Dr. Korinek's List of Remedies for all the known ailments of Horses, Cows, Pigs, Sheep, Dogs, Cats and Poultry, its free.

Dr. Korinek is a Veterinarian of National reputation. He has served four years as president of Oregon State Veterinary Board and State Veterinarian under two governors.

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Cost less than half as much as the milk raised calves. Increase your profits by using

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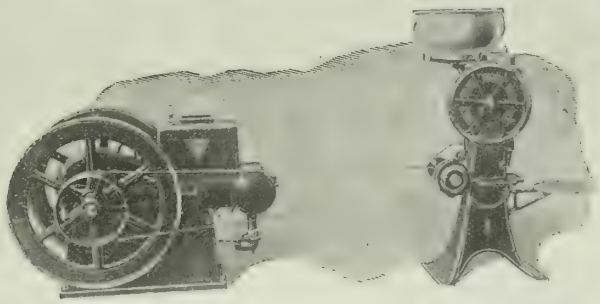

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The 1,500,000 satisfied users of De Laval Cream Separators has proved that they are the thoroughbred among cream separators.

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The Universal Power Drive attachment manufactured by The De Laval Separator Co. is also one of the best and latest additions to the De Laval line, as it enables the user of a De Laval Cream Separator to run his separator direct from the engine.

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I offer 6 PURE-BRED HOLSTEIN-FRIESIAN COWS, A. R. O., and direct descendants of A. R. O. dams.

6 Pure-bred Heifers (Heavy Springers).

1 Bull, 1 Heifer. All carrying the best blood lines of the breed.

J. S. RHODES, R. 2, Box 34, Modesto, Cal.
WOOD COLONY

The HINMAN MILKING MACHINE took First Premium at the 1913 State Fair.

Manteca, Cal., July 20th, 1913.
Chas. F. Daniells & Son,
Modesto, Cal.
Dear Sirs:
I want to tell you of the great success I am having with the Hinman Milker. I had four machines installed a year ago and have been milking an average of forty-six cows and the work has been done by one man.
The milkers do not injure the cows in any way, the fact of the matter is they seem to like it, or at least they seem to be more contented when the machine is used.
I do not think any dairyman can afford to be without the Hinman Milkers.
Very truly yours,
E. POWERS.

C. F. DANIELLS & SON,
Modesto, Cal.
California and Oregon Agents.

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Fast Electric Trains Between San Francisco, Oakland and Sacramento

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LOSSES SURELY PREVENTED by Cutter's Blackleg Pills. Low-priced, always fresh and reliable, they are used by over 80 per cent of California and Western stockmen because they protect where other vaccines fail. Write for booklet and testimonials.
10-dose pkge. Blackleg Pills.....$1.00
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Cutter's Blackleg Pill Injector.. 1.50
Pills may be used in any injector, but Cutter's is simplest and strongest.
The Cutter Laboratory, Berkeley, Cal.
Insist on Cutter's. If druggist doesn't stock, order from Laboratory.

A Desirable Inexpensive Silo For the Middle West.

[Written for the PACIFIC RURAL PRESS.]

The increase in population and rise in land values in the arid west will cause the gradual introduction of more intensive methods of farming, in dairying, crop production, and the various other types. At the present time the silo has found a place on a small percentage of the dairy farms of the west. One of the important reasons for this has been the cost of construction. This can be largely overcome by the use of an underground or "pit" silo, and in localities having limited rainfall, this type will prove to be about as serviceable as the overground variety, provided it is properly constructed. The pit silo can be built by the farmer himself at a cost which should not exceed $1.25 per ton capacity. It should be constructed in a clay soil where the ground water or water table is at least 25 feet below the surface.

The pit may vary in size depending upon the number of animals to be fed, it usually ranges from 20 to 25 feet in depth and 10 to 15 feet in diameter. The depth should be twice the width, and the walls should be kept perpendicular and circular in form. After about two feet of the soil has been removed a cement collar should be constructed to this depth, which serves as a protection to the surface opening. This collar should be about a foot wide at the bottom, and when thoroughly set the earth may be excavated to another four or five feet. To prevent the silage juices from being absorbed by the soil it is necessary to cover the walls with cement. In a heavy clay where there is little danger of caving a cover of one-half an inch of good rich cement mortar will be sufficient. The mortar should be made of one part cement to four parts of clean sharp sand. Before this first coat of mortar is well set a second coat of the same mixture should be applied, and before the second coat gets well set, a third coat should be applied, using one part cement to three parts sand for this application. The walls should be troweled down smooth after this last coat, and the excavation continued. By this method the plastering is finished at the bottom and a scaffold is not needed. With lighter clay soils it may be necessary to apply the mortar to a close mesh rabbit wire or some similar material, which is firmly anchored to the dirt wall. In softer ground where there is danger of caving, a cement wall about two inches thick may be required. In this case a wooden or metal form will have to be used to hold the cement in place until it is thoroughly set. By constructing the wall in sections as above small forms from 4 to 5 feet in height will answer, although in this case the plastering will have to begin at the bottom of the pit. The mixture to use for such a wall should contain one part of cement, two and one-half parts of sand, and two one-half parts broken stone or gravel. This mixture should be made wet enough to pour and tamped after placed in the form to drive out all air and compact the mixture. To make these cement walls air tight and water proof they should be washed with pure cement and water, applying the same with a whitewash brush.

Even in such silos where the walls are not plastered, the silage keeps in good condition for the first year or two, but after this period all pit silos should be plastered. It is most desirable, however, to plaster the walls for the first year's crop. A floor is not required in the plastered or unplastered pit silo.

The chief objection to the pit silo is in the removing of the silage for use. Two simple methods may be employed for this purpose. First, the silage may be raised by hand by means of a swinging derrick in connection with a windlass and pulley; or, second, it may be raised by a horse in connection with a block and tackle.

This type of silo should be considered seriously by the western dairymen who are milking 20 or more cows and have a good market for their products, but who cannot afford an over-ground silo.

The following table shows the approximate amount of silage required to feed 15 to 50 cows, 180 and 240 days, based on a daily consumption of 40 pounds or about one cubic foot of silage per head.*

No. of dairy cows.	Feed for 180 days, tons.	Feed for 240 days, tons.	Diameter of silo, ft.
15	54	72	10
20	72	96	12
25	90	120	14
30	108	144	16
35	126	168	16
40	144	192	18
45	162	216	18
50	180	240	20

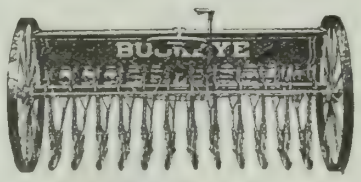
*Note—Sheep require about one-third as much silage as dairy cows.

CAPACITY OF ROUND SILOS IN TONS.

Inside height of silos.	Inside diameter in feet. 8	10	11	12	13	14	15	16
20	17	26	30	38	44	51	59	67
21	18	28	33	41	47	55	63	72
22	19	30	36	43	50	59	67	77
23	20	32	39	46	54	63	72	81
24	22	34	41	49	57	67	76	86
25	23	36	43	52	60	71	80	91
26	24	38	46	55	64	75	85	97
27	25	40	49	58	68	79	90	102
28	27	42	51	61	71	83	95	109
29	28	44	54	64	75	87	100	114
30	30	47	65	67	79	91	105	119

CHAS. S. KNIGHT,
University of Nevada, Agronomist.
Reno, Nevada, Nov. 4, 1913.

THE "BUCKEYE"



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Do not forget our SPECIAL ALFALFA DRILLS 20 discs, 4 inches apart.

Write for prices and catalogue.

THE H. C. SHAW COMPANY
Stockton, Cal.
WHOLESALE DISTRIBUTORS.

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Write for my new price list of California Native Plants, containing fifty-eight choice species, all of which are worthy of a place in any garden.

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FANCY ALFALFA SEED
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WRITE FOR PRICES
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HILLCREST STOCK FARM

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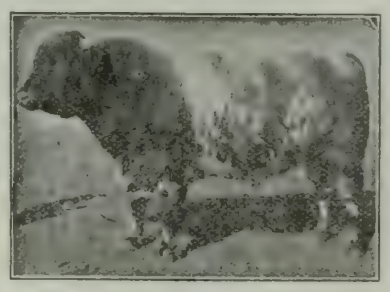

KING LANCASTER, Son of King Edward, only three-time Grand Champion at California State Fair.

Breeder of
SHORT-HORN CATTLE
SHROPSHIRE and
MERINO SHEEP

Have for sale some choice range-raised bulls sired by King Lancaster, Knights Perfection and Bapton Broadhooks III. Single or car-load lots.

America's Leading Horse Importers
PERCHERONS

As usual, every First Prize winner at the Great California State Fair can be seen at our stables. If you want the Best, let us hear from you.

McLAUGHLIN PERCHERON CO.,
47th and San Pablo Ave., Oakland, Cal.

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Shire Horses

When you buy a stallion, buy a good one. An inferior stallion is dear at any price. High-class stallions and mares always for sale.

HENRY WHEATLEY,
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HOPLAND SHORTHORNS

We still have some excellent Shorthorn Bulls, just ready for the range. Write for prices.

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1st Prize Ram Lamb, Omaha, 1911

San Ramon Shropshire Flock
Purebred and Registered Rams and Ewes For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
OREGON STATE FAIR, SALEM—Two firsts, five seconds, champion ram and ewe.
INTER-STATE FAIR, SPOKANE, WASHINGTON—five firsts, three seconds, champion ewe.
INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

BISHOP BROS., San Ramon, Contra Costa Co., Cal.

FIRST CLASS DAIRY COWS FOR SALE

The Vina Dairy, owned by the Stanford University, have decided to dispose of some of their non-registered stock in order to make room for, and give better attantion to, their large herd of registered Holsteins.

If you are interested in good Holstein types and heavy producers, call or write to the VINA RANCH, Vina, Cal.

Jersey Breeders Start Futurity.

(The following article has been in type for several weeks but has been crowded out from time to time with other matter; however, it is a subject which should receive the consideration of every Jersey breeder and we trust will be considered in that way.)

At a recent meeting of the California Jersey Breeders Association, held at Modesto it was decided to start a Jersey Futurity Stake for heifers dropped between May first and December first, each year.

The stake is to be contested for annually in the five-day butter-fat contest in the class for heifers under thirty months of age at the California State Fair, or such larger exposition as the directors of the California Jersey Breeders' Association may decide upon.

The entries shall close on December first of each year for the purse to be contested for at the State Fair of the second year following; as, for instance, entries close December 1st, 1913, for the annual purse to be contested for at the State Fair or National Exposition in 1915, and so on each successive year.

Entries must be filed with the secretary of the California Jersey Breeders' Association on or before the date of closing each year. No heifer will be allowed to compete that has not been registered in the American Jersey Cattle Club's Herd Register and no heifer can be entered by any person except the breeder, who must be her owner at the time entry is made, and whose breeding herd must be located in California. All entries must be made through the office of its secretary. On entering a heifer, her owner must give date of birth, name and herd register number of both sire and dam.

The entry fee will be $8, divided into four payments as follows: $1 when the heifer is entered on or before December 1st; $1 on or before the 25th of the following September; $1 on or before the 1st of the following December, and $5 the day before the contest starts, before which time name and herd register number of the heifer must be given.

The entry fees paid in, with such added amounts as fair associations or other organizations or individuals may contribute, will constitute the amount of the annual stake.

The amount of the stake will be divided into four moneys, as follows: 50 per cent to the heifer making the greatest amount of butter-fat in the five days; 25 per cent to the heifer making the second greatest amount; 15 per cent to the heifer making the third greatest amount, and 10 per cent to the heifer making the fourth greatest amount.

Should a heifer be sold after being entered, the new owner will have the privilege of starting the heifer in the contest for the stake, providing all the requirements of the entry rules have been complied with and all fees paid when due.

In the event of the death of a heifer entered before the third payment of entry fee is due, her breeder may substitute any other heifer of his own breeding which fills the requirements of these rules.

No entry fees will under any circumstances be returned to breeders or owners, but such entry fees when paid in will become a part of this stake.

All moneys paid in to the secretary as entry fees or contributions towards this stake will be held in the treasury of the California Jersey Breeder's Association, and will be paid out by the treasurer to the winners on warrants signed by the president and secretary of the association.

Application blanks may be obtained by notifying J. E. Thorpe, Secty. California Jersey Breeders Association, R. 6, Stockton, California.

EXPOSITION STOCK NEWS.

It is now practically arranged that view herds composed of typical animals of all the special breeds will be maintained in the Live Stock Department of the Panama-Pacific International Exposition throughout its entire period from February 20th to December 4th. These view herds will include horses, beef cattle, dairy cattle, swine, sheep, poultry, pigeons and pet stock. As the whole motive of the Exposition is educational it is believed that this will result in greater good to all the breed interests than would any sort of contest between breeds. The Panama-Pacific International Exposition will be the first great Exposition to be held in the Pacific Coast area as well as the first to maintain a Live Stock Show throughout its entire period. It is predicted that the Live Stock Show of 1915 will mark an epoch in the industry in this and other countries, and ample provision will be made for the accomodation of those breeders and exhibitors who desire to make sales of animals either during the contest for premiums in October and November, or during the maintenance of view herds.

The proposition made by the California Jersey Cattle Club to inaugurate a contest in futurities for their breed for the Panama-Pacific has excited a great deal of interest among the breeders of Jersey cattle in other States as well as in California.

The greatest concessions in railroad and steamship rates to shippers of exhibits that has ever been made to any large Exposition have been secured for the Panama-Pacific International Exposition. Already the railroads west of Chicago announce a one-way rate on round-trip shipments of live stock with a rebate of 25 per cent on all animals which may be sold at the Exposition. The ocean steamship lines announce a rate of one way for the round trip, and while it is predicted that all of the animals which are sent to San Francisco for Exposition purposes can be sold for profitable prices, it is interesting to know that these concessions have been made in favor of what promises to be the greatest Live Stock exhibition that has ever been held.

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

Save Money On What!
Second Hand Pipe
By buying at the
ALEXANDER PIPE CO., Inc.
256 North Point St., San Francisco, Cal.

REDWOOD TANKS
I sell to the consumer Box shook and Boxes Trays, Lumber, Millwork Doors, Windows, Moulding Wagon tanks, Spraying tanks. Independent.
R. F. ..ILSON, Stockton, California.

HILLIER JERSEY FARM

is offering a limited number of heifer and bull calves for sale, sired by the famous bull, **King Polo of Bleakhouse**, out of some of the best individuals in the herd. Also a few two-year-olds bred to **King Polo**. All stock fully guaranteed. For particulars and pedigrees

APPLY
G. O. HILLIER
3008 HARPER ST., BERKELEY, CAL.

HEREFORD BULLS
100 Hereford Bull Calves 100
FOR SALE
Single or in Carload Lots
DAVID JACKS CORPORATION - - MONTEREY, CAL.

Make Your Own Olive Oil

WE CAN SUPPLY YOU WITH JUST THE OUTFIT YOU WANT, LARGE OR SMALL.
Write us,
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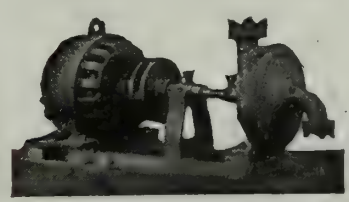

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Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.
Our retail prices are less than our competitors' wholesale prices.
We guarantee our pumps the equal in quality and capacity of any. Live agens wanted. Write for circular and prices.
PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

NO PIT
is required with the
Krogh
Deep Well
Turbine
Pumps

You bore a hole and insert the pump in same, no matter what depth to water. Pumps are automatically water balanced and are self-aligning.

More water can be obtained from a bored or drilled well than with any other type of pump.

Write for Bulletin

Krogh Manufacturing Company

SAN FRANCISCO, CAL.

Branch at
LOS ANGELES, CAL.

Once upon a time a farmer, seeing an ad for a cheap telephone, ordered one.

Did he save money?

In due time the phone arrived and was unpacked. It looked pretty good, the farmer thought. He installed the phone at once.

Did it work O. K.?

Yes it did—at first; but as the days and weeks and months wore by this farmer began to realize that his telephone was not so cheap after all—unreliable service and repairs, due to cheap material and poor construction, made that telephone in reality a high priced one.

This is the experience of many, many buyers.

If you don't know, find out all about Kellogg—from users—our customers are our best advertisement.

Write today for books on real telephones and line construction.

Mention this paper.

Kellogg Switchboard & Supply Co.

San Francisco Office
86 3rd St.

A CALIFORNIA HOBO PARADISE

"Turn no hungry man away from the Parrott home."

On his death bed John Parrott, a multi-millionaire clubman of Hillsborough, solemnly laid the injuction on his wife that all who came hungry to the home amid the stately and ornate park which is one of the beauty spots of Hillsborough, should be given food and shelter.

That was in 1884, and since that time more than 300,000 tramps and wanderers and adventurers have received succor from Mrs. Parrott, who has held her husband's dying wish as a sacred trust.

Yesterday, for example, 25 tramps were fed at the Parrott home.

There is a porch at the back of the huge kitchen attached to the mansion which is used as the hoboes' dining room. There they are given hot meals in abundant quantity and of the best quality. For years Mrs. Parrott employed a special chef to cook for her wayfaring guests. She puts aside a large monthly allowance in her budget of household expenses to provide for them. They are also permitted to camp in a special camping place. Sometimes 50 to 100 men are gathered there—professional tramps, outcasts, unfortunate men out of employment, and all sorts and conditions of men upon whom lay the spell of the wanderlust and who heed the lure of the ever-receding horizons of the open air life.

Around their camp fires by night they sing songs of the open road and tell their tales of curious, picturesque adventurings, while from the lighted mansion comes the sound of dance music or the laughter of black coated men and women radiantly gowned at glittering dinner tables.

Mrs. Parrott's daughters, Mrs. Christian de Guigne and Mrs. A. H. Payson, and her granddaughter, the Countess de Tristan, have often helped to entertain the tattered and dusty guests of the camping ground without, as well as the formal and invited guests within the ornate mansion.

Mrs. Parrott frequently receives letters from men whom she has fed when they were hungry, and sheltered when they were homeless, which tell her that her unostentatious charity has nourished their spirit, even as her food has nourished their bodies, and taking a new grip on life, they have faced and conquered fortune—some of them becoming men of wealth and highly placed in the world.

But whether they are what more timid and conservative philanthropists term the "deserving poor," or whether they be men simply down on their luck for a while, or whether they are out and out tramps, confirmed past redemption in vagabondage, Mrs. Parrott welcomes one and all, and treats them all alike.

SMUTTY WHEAT AS SEED.

To the Editor: Please inform me if smutty wheat dipped in bluestone or formalin, then planted, will produce a good crop.—Subscriber, Calaveras county.

Even if a pretty good stand of wheat could be obtained with smutty seed dipped in bluestone, it would be better to get good clean seed in the first place, if for no other reason because smutty seed would not be strong, vigorous seed, and the better the seed, the better the crop. Furthermore, all the smut is not usually killed by the bluestone method as ordinarily conducted and the percentage of smut infection from smutty seed would be very much higher than from seed clean in the first place, so from several standpoints smutty wheat should not be used.

PEORIA DRILLS Save Seed Increase Yield

Pity the Poor Bird—

—who follows a Peoria Drill. There isn't a chance for him to get a bite of grain, for the patented disc shoe deposits it all at the exact depth desired on the bottom of the furrow. Moisture is secured and the wind cannot uncover the seed. Being planted at an even depth, grain germinates and ripens evenly.

Peoria Drills are made right in every particular. Frames especially strong. High steel wheels. Feed is governed by speed; accurate, never misses; the only really reliable feed.

WRITE FOR INFORMATION ABOUT THE PEORIA BEFORE YOU BUY

NEWELL MATHEWS CO.
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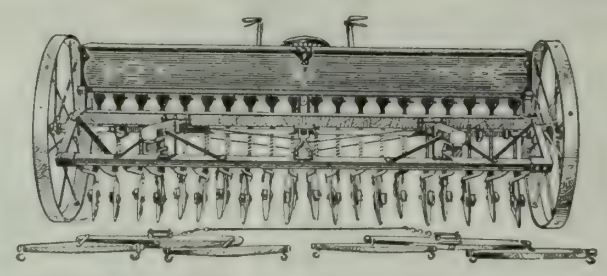

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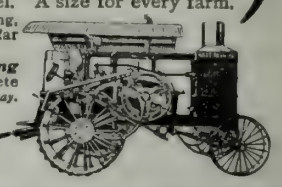

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The Winter Egg Question.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

Like the poor, this winter, the egg puzzle is always with us, and it does seem to take a lot of talk to even half answer it. I don't know whether anyone ever did really answer it fully. Somebody whispered to me awhile ago that the RURAL PRESS now had over 18,000 readers. Now would it not be a case of making two blades of grass grow where only one grew before for some of those 18,000 hard-working men and women if I can even half answer that puzzling question? It is worth trying for, anyway, because I, like every living soul, owe a lot of debts that I will never be able to pay in one short life. Ever notice how proud each one of us is to say, "I don't owe anybody a cent," but we ought not to be so proud nor boast so loud, for there are none of us, no not one, but owes debts we can never pay except by trying to help others, as we ourselves have been helped. I have been helped lots of times by people who really did not think they knew anything worth telling, but it was because I could see through what they told me, and they could not. Now that is why some people do not profit by what they read, or from other people's experience; it is not always told so they can understand it. Some writers talk, like preachers, "at" people, instead of to them. I beg the preachers' pardon, because I should have said "some preachers." I'm not very strong on preachers, anyway, they are too fond of chicken on the platter, and I like chicken best in a nice clean house.

HOUSING FOR WINTER EGGS.—And that is the text for this sermon—a nice clean, airy, if you like, but not drafty house. California needs no expensive heavy board houses, but we do need a house that is dry and free from draft. It makes very little difference what sort of lumber is used, so that there are no cracks to let wind through and so that the roof is rainproof. The front should be wire netting and the house should be so placed that the front does not face the wind.

A good dry floor is also necessary, but it does not much matter whether it is of earth, cement, boards, or gravel, so that a good foot deep litter is kept on it. Plenty of litter is one great feature in egg production, for when hens are exercising tney are cheerful, the blood is in circulation and every part of the hen's anatomy is being nourished. A hen's system, like our own, is built up and nourished by the blood, and unless the hen is active enough to keep up good circulation the system does not get the benefit of the food the hen eats in such a way as to use it for egg production. The food is used for extra fat after the bodily needs have been supplied and eggs are out of the question when a hen gets so fat that exercise is disagreeable to her.

FEEDING FOR THE WINTER EGG.—There has been so much said of late about feed that more would almost seem superfluous, but there is a knack in feeding for winter eggs. Wheat browned in the oven at night and fed just warm in the morning is one of my old favorite plans to fetch eggs; another is to boil a kettle of wheat, and I am almost afraid to say what else, at present prices, but on the farm there are always scraps of hog meat that can be used for this purpose, and it does not take much.

I have seen whole flocks of hens that looked to be in perfect condition, with combs as red and bright as any could be, and yet there were no eggs being laid. And this in spite of the fact that they had plenty of grain and plenty of green feed. Now in a case of this kind it is simply animal protein that is lacking, and when that is supplied the eggs just roll in for market. Our climate is not a great breeder of insect life or earth worms and hens cannot get enough animal food without some outside help. Then again, we must consider that winter is not the natural season for laying, so that when we are trying to go against nature, we must be prepared to pay a little more in some ways, and this is one way. Feed a little more animal food in the form you can get it cheapest and best.

In fact, we must make conditions, both in housing and feeding, as near to prevailing conditions in spring time as possible. Everything in nature, except man, rests in winter, at least under natural conditions they do, but we have almost successfully fooled the cow into milking in and out of season, and in time we shall fool the hen, but she has a little natural instinct left yet, and that is what we have to master in feeding for winter eggs. In the East they have heated houses and go to a lot of trouble that we do not have to, so we should not begrudge a few little items that cost little labor or money.

A warm mash, not hot, is another inducement that will coax biddy to lay. If this can be fed, say, about eight in the morning, the hen starts the day with the very elements that are needed for egg laying. If this can be done, it is best to feed a little grain in the litter at night, then she is busy getting up the circulation before the mash arrives and is all ready to digest the mash. All these things are a little trouble, but it pays when eggs are fifty cents a dozen.

Of course, the man with, say, one thousand hens can't fuss with little things, but the men or women from one dozen to 500 hens can if they arrange their work right, and it is to them I am talking; the big poultry man has his work systemized and he does not change unless he is convinced he is on the wrong track, in other words, he makes haste slowly. Now, outside of forcing with drugs, I have given you the only way to get winter eggs, and drugs soon wear out the hen's systems, burn them up would be nearer the truth, and I don't believe in burning, so if you want eggs that way, it is up to you to get them.

FIG TREES, FIG LEAVES AND CHICKENS.—Chickens in pajamas is the latest Burbanked fowl. Chickens in pajamas are the latest novelties in the store room at the Hotel Oakland. They arrived yesterday from Los Angeles, and are the first of the new "featherless chickens" to be seen in the bay region.

The featherless fowl was "Burbanked" by Mrs. Frank Wilson of Los Angeles, who by careful breeding has obtained a chicken which needs only decapitation to prepare for the frying pan. They are dressed in pajamas to protect them from the cold weather in the bay region. "It is a great saving in labor," said Emery La Valle, the storekeeper at the hotel, who imported the chickens. "They are something like a Mexican hairless dog. I intend to put in a line of them soon." The new chickens are the same in flavor as the ordinary chicken.

In the same mail with the above clipping the editor forwards a query from a subscriber as follows. We desire to plant some fig trees in our chicken yards to furnish shade and protection as well as to utilize the space. We thought the figs also would assist as chicken food, but have recently heard that they would be detrimental and injurious to the chickens. Can you enlighten me?—J. W. M., Los Banos.

ANSWER.—It seems to me if our subscriber could get into communication with these people who are raising featherless chickens, he would have a bonanza in the fig trees. If the authorities are to arrest women wearing slit skirts, let's strike if they don't arrest naked hens, and at least force them to wear "fig leaves." Trusting the enquirer will see the point and at least enjoy a laugh, we will now answer his query as to the figs. As figs contain very little acid, I don't see how they could be harmful to the hens, the only trouble would be if they ate in too large quantities they might be too laxative for laying hens. But that is the case with any fruit; the very best kind of tree for poultry yards is plum or prune; that is, the chickens do more good to these fruits than anything else, but it does not pay to let them eat them, because they are worth more as human food, but poultry will get fat on them, and I would think figs would work on the same principle. In fact none of the sub-acid fruits hurt chickens, if they are fed dry grain in connection. There would be one advantage in planting fig trees, namely, the chickens will not eat the leaves, while if any other tree is planted you will have to protect it until it grows out of reach of the chickens or they will keep the tree naked of leaves and it would burn up.

TURKEYS AND COMMISSION MEN.

To the Editor: I am in need of a little information in regard to marketing turkeys, as I have about 100 to sell in the next month or two, and my experience with commission merchants has not been very satisfactory. Would you please be kind enough to hand this letter to some responsible party who handles poultry and is not a commission merchant. Will have between 30 and 40 turkeys for the Thanksgiving markets; they are large and well fed. I would ask you for the address of responsible poultry dealers, but the time is so limited I am afraid I would not have time for the necessary correspondence. G. T. A.

Snelling.

This arrived too late to be published before Thanksgiving, but use it, as turkeys will be marketed in large quantities for Christmas as well as Thanksgiving and it brings up some important points. One is that unless Turkeys are sold on the ranch, they can hardly be sold to advantage by correspondence and should be sold on commission. The dealer has to guess at turkey prices, for one thing, and, for another, a dealer hates to buy without seeing the goods, from a farmer especially, for farmers nearly always overestimate the quality of their goods, and the price would probably be too low if the bargain was made by mail. Therefore, get a good commission man and sell on commission (with turkeys) and be done with it. Get a commission firm that is long established and has a good reputation. Ask the local banker to recommend one if you can get one no other way, or read the PACIFIC RURAL PRESS advertisements.

Regarding the preparation of turkeys for the market, dealers recommend the following: Kill (or ship) only fancy stock for the Thanksgiving market, or Christmas market either, though all turkeys should be in fine condition by that time. Young gobblers should weigh 12 pounds up and hens 10 pounds and up. Pick dry and cool before packing. Coop 24 hours before killing and feed only water during that time. Monday and Tuesday are the best days to get on the market before Thanksgiving and a corresponding period before Christmas is good. Turkeys can be shipped in alive, but this is not as desirable as to ship them dressed. If shipped alive, they should arrive earlier than when dressed. Valuable information on preparing turkeys for the market is contained in the PACIFIC RURAL PRESS of October 11, 1913.

The Tulare Co-operative Poultry Association expects to start a hatchery for the use of members.

The ranch formerly known as the Chamberland and Carr ranch, near Hanford, Kings county, has been put upon the market, and it is expected that there will be a good many people come into the section, as there are 2,200 acres in the tract.

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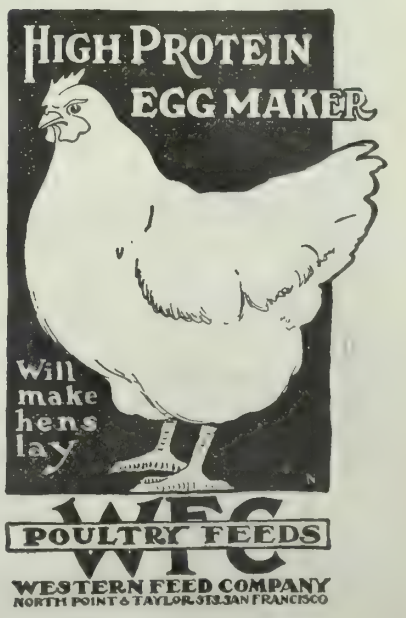

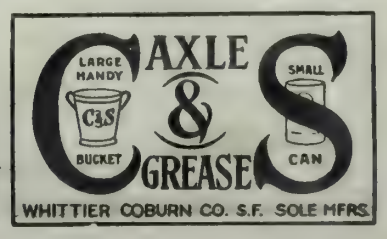

The Home Circle.

Furniture for the Farm Home.

[Written for the PACIFIC RURAL PRESS.]

Christmas is close at hand and most people are puzzling their brains over the most suitable presents for friends and other members of the family. In certain respects nothing is better than suitable furniture, or perhaps put it, furnishings for the home, to make it a little broader. This is a live question at all times, but it is especially appropriate for Christmas time, for Christmas is essentially a festival of the home and nothing outside of the character of the members of the family is so closely related to home life and comfort as the furniture, carpets, table ware, and such things. Presents with some people call to mind useless things—the more utterly useless a thing is, the more clearly evident that it was meant as a Christmas present. It is a peculiar idea, and when one gets the true thought that a Christmas present of all things should give comfort and pleasure throughout the whole year, the more one feels justified in spending for home and friends.

A chair is not merely an object to sit down on, a rug not a piece of cloth to keep off the cold, a tablecloth not a means of keeping the top of the table from becoming scratched, the lamp not merely a source of light. It is true that in eating breakfast off the kitchen table a person may not care whether it has a pine or oak top, whether it is covered with linen, cotton, oil cloth or newspapers, provided eating is good, the chair serviceable, and the table does not have those compartments for flour and such that prevents a man from getting his legs under it.

When it comes to comfort, however, things are different. For the main meal of the day it is pleasant to sit down on a chair that is made of fine and attractive wood, of good design and a joy to see, before a table and a table cloth that will fulfill the same requirements; the rugs should have a color and design that fits in well with the furniture and the walls of the room and give the effect of being there because it was good to be there, not because they had to be. And after dinner and chores one wants to sit in a rocker, a Morris chair, or some other chair made for comfort and convenience and to read from a light that throws the white light where it is needed and a soft color over the rest of the room. Good home conditions change existence to real living.

A person can only buy furniture that is exactly right when there is a large variety to select from. Buying for beauty and comfort is not like buying a kitchen chair, restaurant table ware, a Chinaman's clothes, all of the same pattern; but when there is only a few pieces to select from one is doing just about that. It is surprising the variety that is needed to get exactly the right choice. Look over a furniture catalogue and in a whole page or two of dining-room chairs perhaps there will be only one or two that will just suit you, and the same with other articles. Then in addition there is a big variety of woods which in quality and color give another great range of choice. Furniture is thus a very highly developed business and the bigger and better the furniture house, the greater assortment of furniture is carried. For example, one of the large San Francisco firms has nine floors crowded with furniture on display for buyers, the building covering 67 by 122 feet of ground. In addition there is a large warehouse holding as much more furniture from which other articles are taken as quickly as sales are made from the store.

A catalogue may give 30 different styles of one kind of furniture, but it can hardly take in everything handled by a large concern, especially since certain very expensive articles would be made without duplicates. However, from a large catalogue a person can get a wide enough range of choice and will have to wonder how in the world there could be such an assortment of the same kind of thing. Of course a catalogue cannot come up to the articles themselves, as an illustration is merely a black and white copy of the genuine article, but the design and to some extent the workmanship is shown by the illustration and the description beneath shows kind of wood and the finish so that one can get an accurate line on the true nature in colors, also, which is a help.

When one is still in doubt as to an article, the comparative price of the different styles demonstrates quality, but the comparison of prices has to be done on a catalogue, as prices vary according to the dealer's methods. A small concern buying and handling small amounts, for example, cannot equal the prices usually offered by a large concern that handles large quantities, has more direct dealings with the manufacturer and keeps the stock moving. The better the business management as a rule the better the prices, for the expense is less in proportion to the amount of stock sold.

The rules used in furnishing a house have to be made by the purchaser. However, there is a big tendency at present toward simplicity and reality, if those are the correct terms to use, as opposed to useless ornamentation and artificiality. In other words, a lot of twists and turns and unnecessary shapes and designs are frowned upon. Judgment is becoming better and is pleased with straight lines, as in the Mission furniture. It is much

better for the housewife also, for such furniture is much easier to keep clean than furniture with lots of hills and hollows. The style also has worked strongly toward actual comfort, and unless an article is shaped and designed to actually fulfill to the best advantage possible the real simon pure object of its existence it is not wanted. The old spider legged parlor chairs which showed that they were surely bought for style because no one would ever keep them for comfort have surely gone out, and it is so all along the line.

Also selection for color has come largely into popularity and this also is a big step in the right direction. Color should be fitted to conditions of use. The sitting room is pre-eminently a place for rest and comfort. Browns and soft colors generally are therefore popular. The pictures on the walls should have the same idea of peace and quiet. Evening scenes or quiet landscapes are very fitting.

The whole subject of pictures in fact is very important. As has been said, a room without pictures is like a room without windows. The quality of the pictures and their nature is in a way as important as the views cut out of the window. Paintings by professionals is out of the question with most persons, but excellent pictures in idea and execution can be secured from the right place at moderate expense.

In the bedrooms furnishing is in a different tone from the sitting room for instead of the soft, dull colors should be bright colors. Weathered oak gives place to bird's eye maple, for example, the rugs and pictures on the walls should be bright and cheerful. The wall paper should be a lighter color and harmonize with everything in the room.

The subject is a big one, but the ruling principles are few. Keep in mind that above all things the home should be comfortable and cheerful, the furniture made for use, not appearance, but yet in appearance as genuinely attractive and suitable to surroundings as possible and that selection for color is one of the most important things there is. In this way, home and the dispositions of those in it will be greatly improved.

A Co-Operative Laundry for the Farmer.

[By the Associate Editor.]

A co-operative laundry is being planned in California, the first of its kind for a farming district at least, and its success or failure will mean much to farm life. Like co-operative laundries in the eastern States, it is to be run in connection with a co-operative creamery, the Riverdale Co-operative creamery in this case provided it is actually started.

Improvements on farms thus far have been largely limited to the outside work or strictly farm operations. In the home too often the work has been run on old lines with very little improvement in equipment. The farmer's wife has had it as hard as ever, though the farmer has gotten away ahead. The co-operative laundry is a great step in progress, removing from the house work the toil of laundering and having it done at little trouble or expense in a plant operated for this purpose alone.

No place is better suited for a laundry than a creamery and a co-operative creamery gives facilities for management, operation and distribution that nothing else can give. It will have largely the same patrons, the same clerical and managerial staff can look after both, the cream wagon, perhaps, can collect and return the laundry, and the members already co-operating in the creamery can conduct their affairs more smoothly than if they had no other connection than through the laundry.

The Riverdale Co-operative creamery has been in operation for nearly three years, and is well established and running smoothly, having a membership of 75 or so. Thus the formation of the co-operative laundry should be easy. A few creamery members probably will not come in, but enough townspeople or farmers not dairying are expected to join to make the number exceed the creamery membership. The new organization will be formed on a stock basis, with shares at $25 each, but otherwise be strictly co-operative. The connection with the creamery will be on a strictly give and take basis.

The laundry projected is, however, planned in connection with the creamery so the same business offices can be used. Likewise there is a fine boiler and this can be used for both as well as not, saving much expense in equipment, fuel and labor. The steam will be conveyed underground to the new building, which will cost about $4,000.

The manager, J. H. A. Jorgensen, has gathered a great deal of data on the subject and applied it to local conditions, figuring that the cost of laundrying should not exceed say $0.75 or $1 per family per week, probably less, depending upon membership and outside business and, of course, the amount and kind of laundry of each family. The rough work will be done by weight, starched and fancy clothes by the piece, and people that like frills and fancy clothes will pay more of necessity than people with less expensive tastes.

The Allen County Co-operative Laundry of Kansas as an example of efficiency, had 240 members, but averaged besides about $75 worth of outside business a week, which nearly paid all expenses, giving the laundry work for members for almost nothing.

The fact simply remains that ordinary laundry costs are high and very high, that the simple method of doing business in a co-operative laundry cuts down the charge to very little besides the actual work and that is very much better than letting the housewife or women of the farm slave over the hot tubs. Whatever it will be in winter, the co-operative laundry will be appreciated in summer.

More can be said when it works out, but it can be heralded as a great step forward in improvement of the California farm house.

An evangelist was once conducting joint revival meetings in the two churches, Methodist and Presbyterian, of a small town. Children's meetings were held every day at the close of school, first in one church and then in the other. One day two girls who attended the Presbyterian Church were discussing the meeting which was to be held in the Methodist Church that afternoon, and Mary asked—"What would you do if they were to ask you to pray?" "I wouldn't do it," answered Martha. "I'd just tell them I'm a Presbyterian."

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THE MARKETS.

San Francisco, Nov. 25, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Trading in the local market has been rather quiet for the last week, though there is a fairly steady jobbing business, and prices are well maintained. Little Northern wheat is being bought by local interests at present.

California Club, ctl	$1.45	@1.47½
Forty-fold	1.50	@1.52½
Northern Club	1.45	@1.47½
Northern Bluestem	1.67½	@1.70
Northern Red	1.55	@1.70

BARLEY.

While the outlook is good for next year's crop, current conditions apparently do not warrant any further decline, and the market shows a firmer tone than for some weeks, both on spot and futures. Offerings are light, and fancy feed is a little higher, though the demand is not very active at the moment.

Brewing and Shipping	$1.37½	@1.42½
Choice Feed, per ctl	1.27½	@1.32½
Common Feed	1.25	@1.27½

OATS.

The movement of seed oats, though much heavier than last month, is not up to expectations. There is a very fair supply in some lines, but values are steadily held.

Red Feed	$1.65	@1.85
Seed	2.25	@2.30
Gray	Nominal	
White	1.50	@1.55
Black Seed	2.50	@3.00

CORN.

All grades are little more than nominal, as there is no California stock offered locally, and Eastern is closely cleaned up on the spot. Further arrivals are due in a few weeks, and somewhat lower prices are expected. A little Egyptian is moving at the range quoted, and considerable Manchurian brown Egyptian is offered at $1.35 to $1.40.

California Yellow	Nominal	
Eastern Yellow	$1.85	@1.90
Eastern White	Nominal	
Egyptian	1.57½	@1.62½
Kaffir	Nominal	

RYE.

There is still some call for re-cleaned stock for seed, but ordinary stock receives little attention. Prices show no change.

Rye, per ctl	$1.45	@1.50
Seed	1.65	@1.70

BEANS.

The only feature of special interest this week is the sharp advance in bayos, which have been moving off rapidly and are now becoming very scarce. Prices in other lines have not changed since last week, but all descriptions are fairly firm, and the shipping movement has so far kept up decidedly well. Stocks in practically all lines have been considerably reduced, and it is expected that prices will be kept up to the present level.

(On wharf.)

Bayos, per ctl	$3.75	@4.25
Blackeyes	4.00	@4.25
Cranberry Beans	3.75	@4.00
Horse Beans	1.90	@2.10
Small Whites	4.75	@5.00
Large Whites	3.10	@3.25
Limas	5.00	@5.20
Pea	Nominal	
Pink	2.85	@3.00
Red Kidneys	4.25	@4.50
Mexican Red	3.75	@4.00

SEEDS.

Hemp is scarce and firm, but not quotably higher, as there is no very urgent demand. Other lines continue moderately active, with values steady at the former level.

Alfalfa	12½	@15 c
Broomcorn seed, per ton	Nominal	
Brown Mustard, per lb		3¾c
Canary	7	@ 7½c
Hemp	2½	@ 3 c
Millet	2½	@ 2¾c
Timothy	7½	@ 8 c
Yellow Mustard	Nominal	

FLOUR.

Prices remain steady at the old quotations, demand and supply being about equal in the local market. There is very little shipping business from this port.

Cal. Family Extras	$5.60	@6.00
Bakers' Extras	4.65	@5.20
Superfine	3.90	@4.10
Oregon and Washington		4.90

Hay and Feedstuffs.

HAY.

Arrivals have increased a little, but are still rather small. Local conditions show little change, as the arrivals are fully adequate to meet the limited demand. Conditions affecting green feed and the coming hay crop are extremely favorable, and buyers are accordingly holding off as much as possible, most of them being fairly supplied by former purchasers. While the consumption of hay is larger in many places, holders in the country show increasing anxiety to sell, though still holding for prices above parity with the local market.

No. 1 Wheat, or Wheat and Oats	$16.00@17.00
do No. 2	14.00@16.00
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 80c

FEEDSTUFFS.

Offerings of bran from the North are rather large, and there is some weakness as to values, though prices are not quotably lower. There is practically no cracked corn in the market, and any urgent inquiry might bring an advance, though new stock is expected shortly.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	24.00@25.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	30.00@31.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	28.00@29.00
Rolled Oats	33.00@34.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Local business in green garden truck is extremely quiet, and while supplies in most lines are light, there is no particular shortage. Local tomatoes are coming in less freely, and are a little firmer than before, but only first-class stock receives much attention. Southern tomatoes are gradually taking a more prominent position, selling at 50 to 85c per crate. Some fairly good gren peas are coming from the South, and find a ready market at an advance over last week, while string beans are in poor shape and lower. Okra is higher, with very little offered, and sprouts show a sharp advance. Mushrooms are an item of some importance. Large offerings of wild stock at low prices have about driven cultivated mushrooms out of the ordinary trade. Celery is coming in freely, and the demand is seasonably active.

Cabbage, per ctl		1.50
Cauliflower, dozen	40@	60c
Cucumbers, Southern, box	50@	75c
Green Peppers, box	25@	65c
Carrots, per sack	50@	75c
Green Peas, Southern, lb	6@	9c
String Beans, lb	2@	4c
Summer Squash, lug box	75c@	1.00
Okra, box		1.00
Tomatoes, box	20@	75c
Eggplant, box	40c@	1.00
Lima Beans, lb	2@	5c
Sprouts, lb.	5@	7c
Celery, large crate	2.25@	2.50
Rhubarb, box	75c@	1.25
Lettuce, crate	65c@	1.00
Mushrooms, lb.	5@	10c

POTATOES, ONIONS, ETC.

Potatoes are moving off at the usual gradual rate, with nothing new in prices. Onions are firmly held at the last quotations, and fancy stock finds quite a good demand at the top price.

Potatoes—		
Salinas, ctl.	$ 1.85@	2.00
New River Whites	85c@	1.10
Sweet Potatoes, per ctl	1.00@	1.25
Oregon Burbanks	1.25@	1.40
Onions: Yellow River, ctl	$ 1.75@	2.00
Garlic, per lb	7@	8c

Dairy Produce.

POULTRY.

The turkey trade is the feature of the week. It is still impossible to tell the final results of the Thanksgiving trade, the market at the present moment being rather less active than was expected. The week opened with a rush, shipments on Monday being twice as large as for the same date last year, but the demand was slow in developing, and prices have been hardly up to expectations. Chickens received little attention, but values are kept about up to last week's level.

Large Broilers, per lb	20	@22 c
Small Broilers, per lb	28	@29 c
Fryers, per lb	18	@19 c
Hens, extra, per lb	17	@18 c
Hens, large, per lb	17	@18 c
Small Hens, per lb	14	@15 c
Old Roosters, per lb		12 c
Young Roosters, per lb	18	@20 c
Squabs, per doz	$ 1.50@	2.00
Geese, per pair	2.00@	3.00
Ducks, doz.	4.50@	8.00
Turkeys, live, per lb	21	@22 c
do dressed	25	@27 c

BUTTER.

The holidays cause some interruption of trading on the Exchange, and business fluctuates greatly from day to day. A gradually increasing shortage of first-class local stock, however, has caused a continued advance in prices, which are 2c higher than a week ago on extras, with a slight advance on firsts. The effect of Australian stock is much less apparent than a few weeks ago.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	34½	35	35½	—	36	—
Firsts	29	31	31½	—	31½	—

EGGS.

The feature of the week's trading was the exceptionally high price record made Saturday, when a sudden buying movement on the Exchange brought extras up to 65c. This, however, was due merely to a temporary shortage in some quarters, and the market has dropped back to 59c. Extra stock, however, is very scarce, and business is largely on storage and pullets, the latter having advanced 2c.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	57	59	65	—	59	—
Selected Pullets	52	54	54	—	54	—

CHEESE.

California flats are firmly held at the old price, while Y. A.'s are slightly lower. Good Monterey cheese has taken an upward turn, with light offerings.

Fancy California Flats, per lb	19 c
New Young Americas, fancy	17 c
Monterey or Jack Cheese	22@23 c

Deciduous Fruit.

Aside from the large demand for cranberries usual at this time of year, trading in deciduous fruits is decidedly quiet. Eastern cranberries are held a little firmer. Huckleberries also are a little higher, and find a fair demand. Offerings of other berries are light, and very little good stock is coming in. Desirable offerings are firmly held, but there is little demand. Apples continue very firm, with a tendency to advance, but the local movement is very light, and the demand for pears, etc., is hardly worth mentioning. Offerings of grapes, though limited, are in excess of requirements, and are moved with difficulty.

Strawberries, chest	$ 6.00@	10.00
Raspberries, chest	4.00@	8.00
Huckleberries, lb.	6@	9c
Cranberries: Coos Bay, box	2.25@	2.50
Cape Cod, bbl	11.00@	15.00
Apples: Baldwins	1.15@	1.50
Spitzenbergs	1.10@	1.60
Greenings	1.00@	1.35
Bellefleur	1.25@	1.75
Newtown Pippins	1.25@	1.75
Pears: Winter Nelis	1.00@	2.00
Grapes: Malaga, crate	65c@	1.00
Muscat	65@	90c
Black, lugs	65c@	1.25
Tokay, lugs	65c@	1.25
Cornichon, crate	65@	75c
Quinces, box	50c@	1.25
Pomegranates, box	50@	60c
Persimmons, box	75c@	1.00

Dried Fruits.

The local market continues very quiet, with prices unchanged and general conditions about the same as for several weeks past. While there is an active jobbing trade throughout the country, most of the large distributors are fairly well supplied, and are not buying to any extent, while the local packers are taking only moderate interest in country offerings, and show no disposition to bid prices up above the present level. No particular change in the situation is expected until after the holidays, when a renewed buying movement may cause some improvement in prices. Prunes are very firm, and packers are asking a slight advance on the larger sizes, which are hard to find, though there is no heavy outside demand. The upward tendency of raisins continues, and a little more interest is reported in the distributing trade. Deliveries to the Associated Company are about complete, and the shortage of the crop is well established. Apricots, peaches, etc., are quiet, and while apricots are scarce and firm, peaches continue a little easy, with a good many small offerings coming out in the country. The New York Journal of Commerce says:

"The spot demand for California prunes is reported to be good, and in view of slow arrivals and closely cleaned up stocks here the spot market is firm on the basis of the quoted prices on goods ex store. Few Oregon Italians are to be had for shipment from the Coast.

"Little or no demand is noted for forward shipment apricots or peaches, and the demand for spot stock is of the light

PROOF

is easy enough to talk about—but not so easy to show.

READ THIS LETTER

Sept. 10, 1913.

Dear Sir:

In reply to your letter, regarding the 32-H.P. Fairbanks-Morse Oil Burning Engine and No. 30 Pomona Pump, which you sold to me, will say:

We started pumping July 2nd, 1913, and have run the greater part of the time ever since that date. We are lifting the water 224 feet. Our well is 397 feet deep. The water column is 275 feet, which places the cylinder of the pump 51 feet beneath the surface of the water and 122 feet from the bottom of the well.

We pump 300 gallons per minute running the engine at normal speed and the pump at 20½ strokes per minute. We use about three gallons of oil per hour at a cost of 8 cents per gallon, $2.40 for ten hours.

Neither engine nor pump has given us any trouble whatever.

The engine runs quiet and smooth and gives more power than is required to run this size pump. A 25-H.P. Fairbanks-Morse engine would drive the pump with ease.

The pump runs smooth and does not make half as much noise as some of the other deep well pumps. Over four hundred people in this district have visited our pumping plant, as all people here are interested in irrigation by pumping, and it is generally conceded that we have the best pumping outfit in this district.

Before contracting for the Fairbanks-Morse outfit, I had made a deal for another kind of pump and engine, but after seeing the Fairbanks-Morse outfit sold to Mr. S., I changed my order and bought the outfit we now have and am thoroughly satisfied with both engine and pump and can recommend this kind of engine and pump to anyone wanting a deep well pumping outfit.

Very truly yours,

(Signed)

(Name on request.)

We can prove to you the absolute supremacy of the Pomona Deep Well Pump for all pumping where a deep lift is required. Call or write us for further information.

POMONA MANUFACTURING COMPANY,
Pomona, California.

jobbing character incident to the season. The general tone of the market on both varieties, either here or on the Coast, is firm.

"California raisins seem to be getting little attention from the distributing trade in this section. The Associated Company, which is held to have almost complete control of the situation, is, however, holding prices firmly up to its quotations on seeded and loose Muscatels. Seedless varieties are dull, and the market for these has an easy undertone on resale offerings, which are said to be available at a little under the Associated quotations."

Evap. Apples, 1913	6½@ 8 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4½c
Black	2½@ 3½c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 @ 4½c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4¼c

Citrus Fruits

The demand for California navels is first class and as only good fruit is going East, the prices are consequently good. From Tulare county heavy shipments are being made, averaging over 60 cars per day. From Butte county only a few cars are going out, as the crop is late and the output will be below normal. From the southern district a few cars are being sent East to supply the holiday trade; there are also a few cars of late valencias held over from last season that are selling on the Eastern auctions at big prices, ranging from $6 to $10 per box. The late rains have helped the growing fruit immensely, and, barring frosts, the season looks very promising. Practically no lemons are being shipped.

Arrivals of new navel oranges are steadily increasing, and the buying movement is limited, as the market is weak and lower prices are expected. A few especially attractive lots are bringing $3.25 or over, but comparatively little business can be done over $3. Valencias are pretty well cleaned up. Lemons show a wider range, some ordinary stock being lower, while strictly fancy lots are held at an advance.

Oranges (per box):	
New Navels	$ 2.25@ 3.25
Grapefruit, seedless	3.00@ 4.00
Lemons	2.50@ 6.50
Limes	4.00@ 5.00

Nuts, Honey, Hops, Etc.

NUTS.

Almonds are little more than nominal, as practically everything has been sold. Walnuts also are by this time pretty well cleaned up. There is quite an active jobbing trade all over the country, the consuming demand showing little apparent curtailment on account of the high prices.

Almonds, new crop:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

The demand here is moderate at present, but offerings are light and desirable grades are firmly held at the old values.

Comb, white	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Offerings are light at present, with little coming in, and while there is no very urgent demand, prices are well maintained.

Light	30 @32 c
Dark	28 @30 c

HOPS.

The hop trade has been rather quiet for the last week. Notwithstanding the scarcity reported in some outside markets, buyers show no very active interest at the moment, and the comparatively small amount still unsold in the country is firmly held.

1913 crop	20@25c

Live Stock.

Beef stock is reported hardly as firm as last week, though offerings are limited. The importation of Australian beef is said to be having some effect on the market. Calves are scarce, and sheep are firmly held since feed conditions have improved.

Steers: No. 1	7¼@ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼@ 6½c
No. 2	5¾@ 6 c
Bulls and Stags	2½@ 5 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	8 @ 8¼c
150 to 250 lbs	8½@ 8¾c
100 to 150 lbs	8¼@ 8½c
Prime Wethers	4¼@ 4½c
Ewes	3½@ 3¾c
Lambs: Suckling	5¾@ 6 c

DRESSED MEATS.

Steers	12 @12½c
Heifers	11 @11½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13½@14 c

WOOL.

No change is reported here, and there is no apparent prospect of improvement until the spring shearing starts, as buyers are taking no interest in such offerings as are still held in the country.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

Prices are steadily held as last quoted, but business is very quiet and supplies light. Owing to the usual condition of the hides at this time of year, a little easier market is expected, but there is no sign of lower prices as yet.

Heavy Steers, over 56 lbs.	15½c
Medium	15 c
Light Steers, under 48 lbs.	15 c
Heavy Cows, over 50 lbs.	15 c
Light Cows, 30 to 50 lbs.	16 c
Kip	15 @16 c
Veal	18 @19 c
Calf	18 @19 c
Dry—	
Dry Hides	26 @27 c
Dry Kip, 10 to 15	25 @26 c
Dry Veal, 5 to 10	30 c
Dry Calf, 7 down	30 c
Horse Hides—	
Salt: Large	$2.75
Medium	2.25
Small	1.00
Colts	25 @ 50c
Dry	75 @ 2.00

HORSES.

For the first time in several weeks, good-sized shipments of outside stock are being placed on the local market, including a fair number of medium to heavy drafters of desirable breed, as well as some first-class stock of lighter weights. Local buyers are taking more interest in the sales than for some time past, and really first-class horses bring prices within the range quoted, though comparatively few horses are in all respects satisfactory. Aside from the local requirements, there is more demand in the country than there has been.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	150@200
Wagon Horses, 1250 to 1350	100@150
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	75@100

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

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"AMERICAN" Surface Irrigation Pipe
"Superior from Every Standpoint"

Made in lengths of ten feet each, from a single sheet of galvanized steel, with a heavy taper collar riveted to one end.

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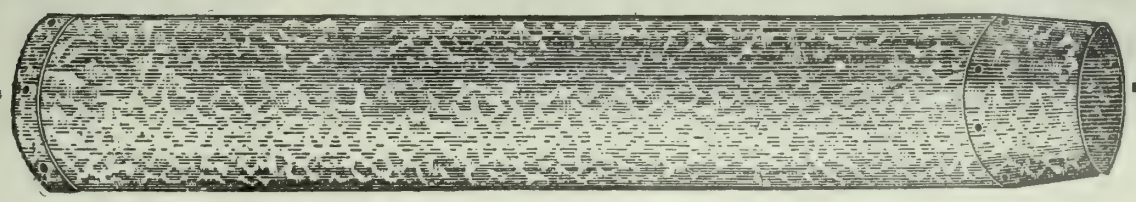

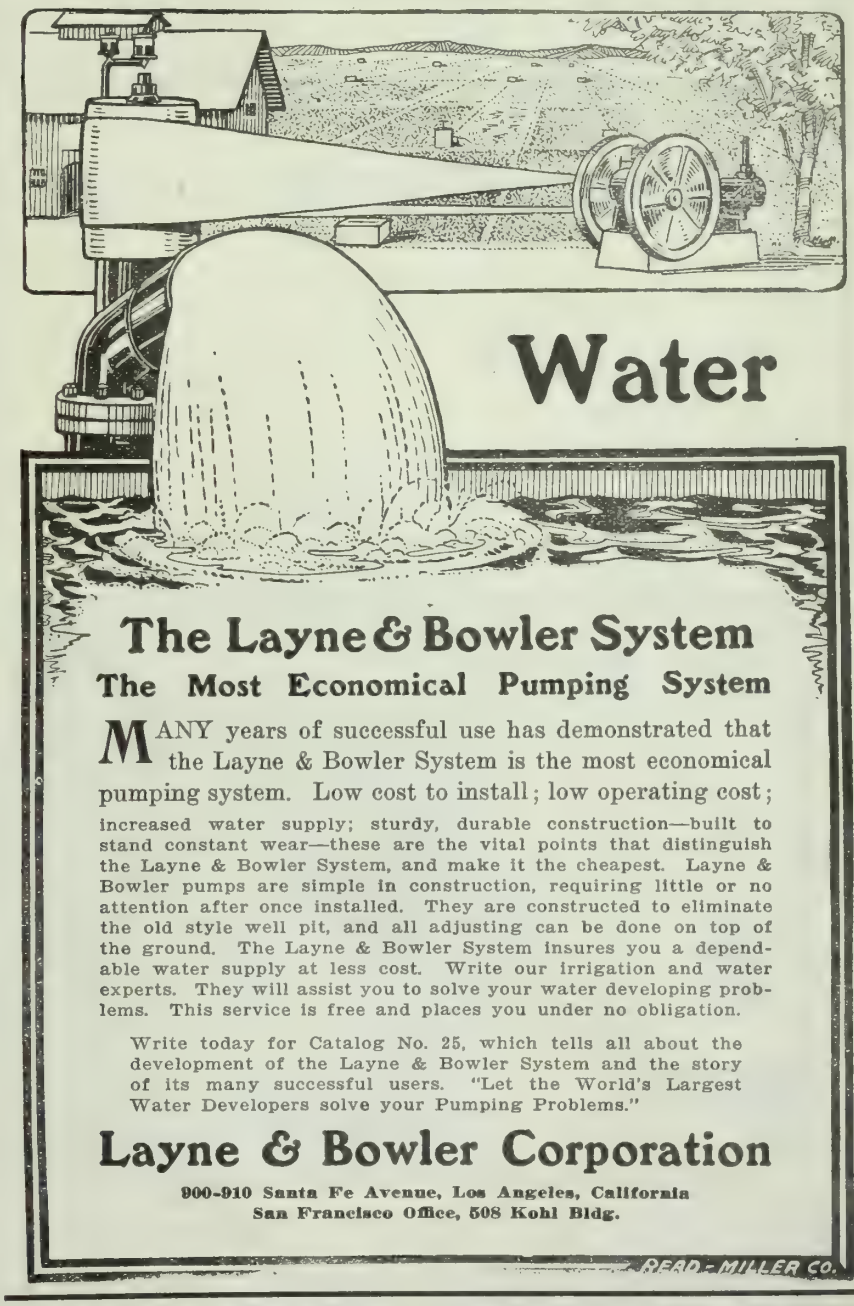

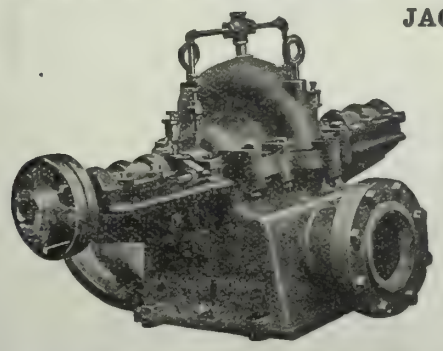

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No place is this more true than on the farm. Irrigation economically and intelligently performed produces dollars where cents previously grew.
For economical, efficient and continuous work in the Irrigation System, on the Orchard and Farm the Jackson pumps have met the severest tests.

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Byron Jackson Iron Works, Inc.

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Los Angeles: 212 North Los Angeles St.
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TEN THOUSAND HEAD OF TURKEYS WANTED FOR THANKSGIVING

We want the farmers of California to raise ten thousand head of choice turkeys for our Thanksgiving trade. Last year we sold fancy dressed turkeys as high as 30 cents a pound. Commence now to get your turkeys ready for the Thanksgiving market. Have them as large and fat as possible. Write us immediately how many head you will have ready for sale at this time, as we want to keep in touch with you from now on until after Thanksgiving and Christmas. Send us the names of all of your neighbors who have turkeys and about how many head each one has on hand, and we will certainly make it to your object to do so.
Mark and consign all produce you have on hand to us at San Francisco.
W. C. PRICE & CO., General Produce Commission Merchants, 211-217 Clay

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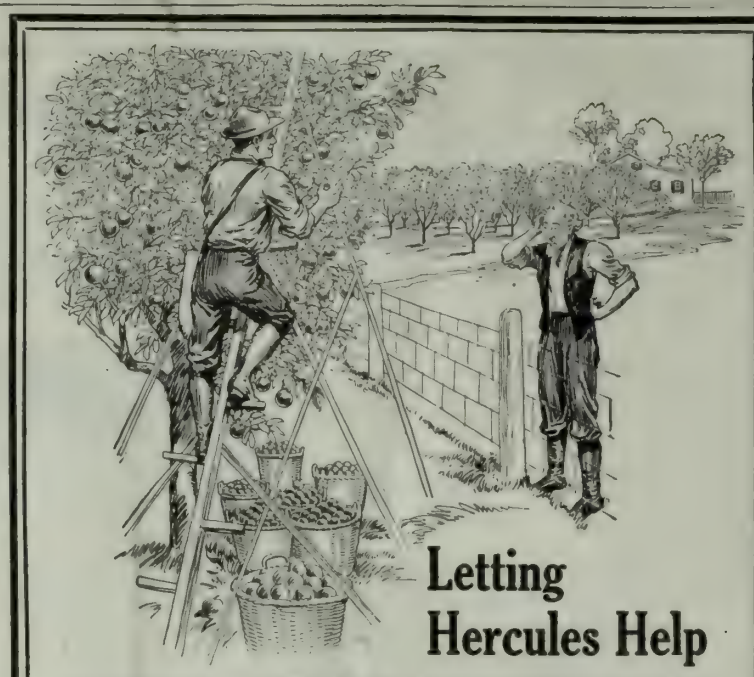

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So you can't understand how I grow 'em? Easy! Just get your tree started right—that's the *big thing*. Setting out a young tree in a spaded hole isn't planting the tree—it's burying it. Take my tip and blast your holes with

Hercules Dynamite

Hercules Dynamite shakes up the ground, mashes up the hardpan, gives the roots a chance to grow and get nourishment.

Hercules Dynamite does the work of a couple of hired men—without board or keep.

Hercules Dynamite lets me blast in the Fall when things are slack. The holes are open to the weather all winter and I put out the trees in the Spring.

Hercules Dynamite is a quicker, cheaper, better way to plant. It means a tree that bears quicker and better. That's why I use Hercules. That's how I grow 'em. Do you understand now?

Write for a booklet on "Progressive Cultivation" and learn why dynamite pays. Address Dept. 54

HERCULES POWDER CO.

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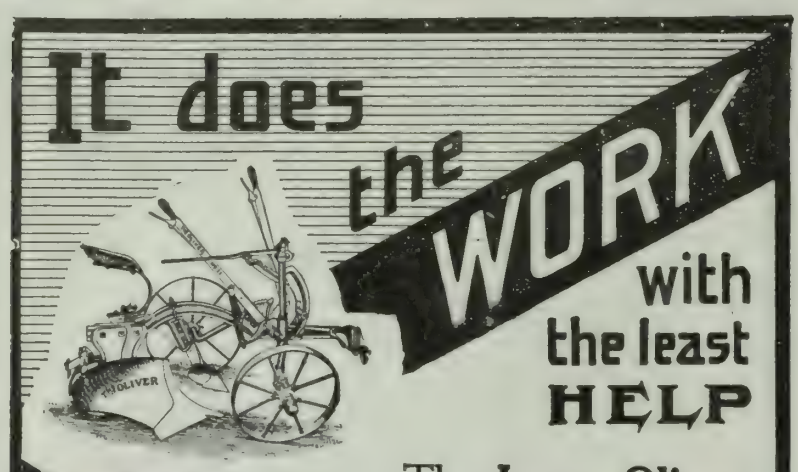

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The plow that meets the soil *more* than half way. Let us tell you why—we'll be glad of the chance.

Write for catalogue P, giving full description of this plow and complete line of Oliver plows, implements, etc.

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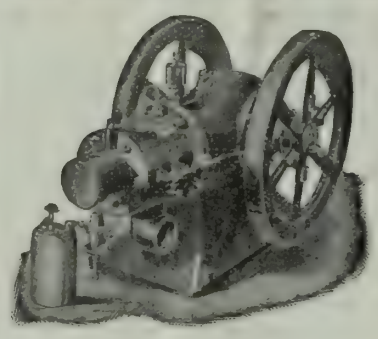

The Simple Oil Engine 7-12-20 H. P.

This is the Engine that has solved the cheap fuel question

It makes no difference for what purpose the engine will be used, it will do all that is required at one-half cost and one-quarter for repairs over any other type. It is simple, reliable and efficient. Let us know what size you want.

The Havana Double Grip Friction Clutch Pulley. The most reliable clutch ever made. Every engine user should have one. It is reliable, safe and cheap.

Commercial Iron Works

481-497 Fifth St. San Francisco, Cal.

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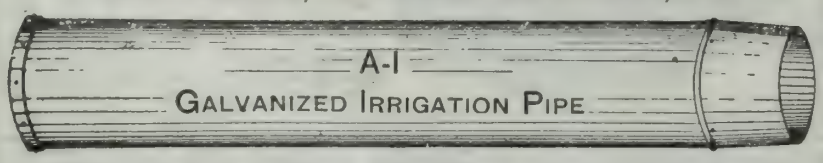

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Nevada Range Sheep in Winter.

[Written for the PACIFIC RURAL PRESS by Prof. B. P. KENNEDY, University of Nevada.]

Almost every camper or fisherman or mountain "hiker" has some time or other become acquainted with bands of sheep on the ranges in summer when water, grass, and flowers are plentiful and the surroundings congenial, but few except those actually engaged in the sheep industry know the hardships and anxieties encountered in supplying food through the long, dreary, desolate winters of a Nevada desert.

At this time the grass is dried up, and many of the summer forage plants have completed their work for the season and shed their leaves.

In order that the writer's curiosity might be satisfied, he accompanied the sheepherders for a month during the middle of winter.

As is well known, the high mountains of Nevada, the mecca for sheep during the summer months, are made inaccessible by cold and deep snow in winter. The sheepman is forced to retreat to the great flat desert valleys and the adjoining foothills. Some who are fortunate enough to have the control of springs are able to keep their sheep in the lowlands in the northern part of the State, but the vast majority are compelled to drive their bands several hundred miles to the southern deserts. The first band followed by the writer consisted of 1500 sheep, including 35 bucks. They were of good grade, having a considerable part of Lincoln and Hampshire blood in them.

The Herder and His Flock in the Sierra Pastures.

At sunrise, which luckily at that time of the year is not very early, the sheep start out to feed. Owing, we presume, to cold and hunger combined, they travel at a rapid pace, about a mile an hour, at the same time covering several small hills and valleys. The plant utilized most at first was the common black sage (Artemisia tridentata), a plant ordinarily scorned by them in the summer months. As soon as the keen edge was taken from their appetities they became more fastidious and settled down to find more choice pickings. These consisted of the western needle grass (Stipa occidentalis), a native blue grass (Poa sandbergii), the bunch grass (Eriocoma cuspidata), a grass well known to the early emigrants coming across the plains because of its abundance and nutritious qualities, and some patches of rye grass (Elymus) and wheat grass (Agropyron). In the center of the stools of these grasses there was still several inches of green forage which was eagerly sought after. Quite frequently the smaller stools of the bunch grass would be pulled up by the roots and left untouched, perhaps because it might take too long to select the leaves from the gritty roots. The native blue grass suffered considerably from the numerous feet disturbing the soil from around the roots, thereby leaving them exposed to the drought and cold.

The western needle grass shown in the illustration is particularly happy in its choice of a place to grow. Among the rocks on small promontories, which were abundant in the region, this grass was plentiful. The sheep clambered over the rocks after the grass, but were unable to disturb its strong foothold.

To digress from the forage plants for a moment, it might not be amiss to relate a little of the social side of things and how we ourselves foraged. Our companion, the sheepherder, was a Frenchman by the name of Renaud, at least that is as near the sound of the name as we could make out. His chief characteristics were good nature, better legs, and a fondness for garlic beyond description. As it is very easy to offend even the lower classes of that polite nation, and being his guest, the writer consumed but did not enjoy garlic raw and garlic cooked, garlic chopped and garlic whole, but when it came to rice pudding a la chopped garlic, our system rebelled. So it became necessary for us to become cook and occasionally sneak back from the sheep between regular meal times to prepare something a la American. It was the rule of camp to bring in a pail of water into the tent before retiring for the night. The place for this seemed to be just at my pillow, and although we retired with most of our clothes on and numerous blankets, leaving only an aperture in the nature of a funnel to breathe through, the mornings were decidedly cold. At least the pail of water was frozen through solid. The condition of the tent could well be described as a furnace by night and an icicle by morning. Fortunately, the stove and kindling were so handy to the bed that by sitting up in bed we could light the fire readily and warm up the tent in half an hour.

To return to our subject, the large heart-shaped leafed sunflower (Balsamorhiza sagittata) was quite abundant on certain slopes. Unlike the oval leafed or common sunflower (Wyethia mollis), the leaves of this plant are greatly relished, even when dried up. An important shrub is the bitter brush (Kunzia tridentata), so named from the bitter taste of the leaves. It belongs to the rose family, and is profusely covered with yellow flowers in spring. The leaves remain on the shrub all winter and are shaped with three short little teeth at the end like the sagebrush, but are dark green instead of gray. The young, tender shoots of the past season's growth are eaten extensively. This process of winter pruning, when continued for a succession of years, changes the nature of the branches to such an extent that when compared with plants that have never been grazed one would hardly credit them as being the same species. An introduced plant over a considerable part of this range was the "filaree" or alfilaria or stork's-bill (Erodium

(Continued on Page 540.)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Dec. 2, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	1.82	6.85	10.14	56	38
Red Bluff	.84	5.26	5.88	60	40
Sacramento	.94	4 63	3.81	60	40
San Francisco	1.12	6 65	4 29	66	48
San Jose	.74	4.27	3.34	64	38
Fresno	.24	2.22	2 10	62	36
Independence	.01	2 97	2 04	56	28
San Luis Obispo	.24	4.92	3 62	62	34
Los Angeles	.02	2.98	2.44	70	44
San Diego	.00	2.29	1 41	64	46

The Week.

The sun seems to have changed his spots this this week to allow about 700 California preachers to go dry-shod over the University Farm at Davis, where they are assembled, by the grace of the Southern Pacific and of the University management, to take a short course in pulpit agriculture. So great a thing was never done for preachers before; Eastern agricultural colleges have rounded them up by scores by half-rate railway fares, and cut-rate beds and board, but California does things 'ansome, with nothing to pay from the first carstep at the home town to the last yellow leg of a chicken at the University's poultry factory. The University has certainly taken a flank movement on the hosts of Satan and will fill the preachers with new suggestions for effective work for good living through better understanding of the practices and purposes of our great rural industry—all of which are, in their essence, designed to bring men nearer to God and to their fellow-men in good work and righteous living. These 700 California preachers are invited to listen, during four days, to nearly 100 sermons on agriculture, each a full hour in length. Of course, no one can hear them all, but there they are, being reeled off by leather-lunged University professors, four speaking at once (in separate assembly rooms, of course) and everyone is invited to take all his ears are long enough to reach. May flies skate their bald pates whenever they seek the refuge which their own parishioners enjoy! It is surely great, this Minister's Week at the University Farm.

The Month's Storms.

While the University of California is thus promoting agriculture spiritually, the University of Santa Clara is looking after material interests, for Father Ricard is still hitting it up for a wet year. He publishes the following:

"The dates for storms on the Pacific coast during December are:

"No. 1—December 1, 7, 14, 20, 27 and January 3.

"No. 2—December 4, 11, 17, 23, 30 and January 6.

"Some of the storms will coalesce. The first list stands for that kind of storms that go east along the northern tier of States, showing there presence here only by successive cloud formations. The second list is more likely to benefit central and southern California.

"The storms of December 4 and 11 will be very severe, across the whole country, and the worst storms of the month. December is expected to be wetter than usual, with plenty of snow on the northern and northeastern mountains."

And thus our Weather Prophets are unanimous again. Mr. Blochman lifted his voice two weeks ago, and before that we ourselves declared that "as goes November so goes the year." It was a gem of prescience!

Calling Upon Caesar.

There was a great and good display at Oroville last week, and we are not surprised that W. P. Hammon, the well known gold-dredger, should be credited with saying: "This section is destined to become one of the greatest agricultural centers of the world, and there is much more money in the fruit industry than mining. Ten acres of olives will produce $3000. What will 10,000 acres planted to olives produce? Easily between $2,500,000 and $3,000,000 a year. This sum is greater than the output of all the dredgers in any one year, and the land will never wear out. And remember that this is only one crop." Mr. Hammon was a fruit grower before he sank to mining, and we are glad to note his return to his first love.

But there was one thing publicly done at Oroville which was an unnecessary slight on California pomologists. A current dispatch from Oroville says:

"The aid of the United States Department of Agriculture has been solicited by the olive growers of Butte county to develop a distinctive California olive adapted particularly for pickling purposes rather than for the manufacture of oil. In olive groves planted to mission olives certain trees will be found upon which the olives ripen earlier than on other trees. Some trees are found upon which the fruit is larger, and hence better adapted to pickling purposes. The type of olive that it is desired to perfect is one that will ripen the latter part of October and will bear large olives adapted for pickling purposes. It is believed that this can be accomplished through selection, and the aid of experts has been asked to perform this work."

Of course it can, if it should really appear that such variations exist and are not dependent upon local growing conditions. And this work can be done by the pomologists of the California Experiment Station. One of our local troubles is that distance lends too much charm to investigators, and they are apt to be called from a distance to do things for which our own men are better qualified. We held our tongue a time ago, when we had something to do with investigation, and such an utterance might be attributed to jealousy. Now we can freely say that such an appeal looks ill. It is not only unjust to our own distinguished experts, but it conveys to the world an idea that we look upon California as merely a province and not as a sovereign State.

Harvard Promotes the Pig.

Speaking about the popularity of educational efforts for agriculture, there comes frequently the intimation that even the oldest institutions are trying to "enter into the life of the people," for the people's good and their own—which is perfectly proper. It seems that one man of science recently said that the pig was naturally low, or something to that effect. At that, Dr. Austin Peters of Harvard rises to declare: "The pig is naturally a gentleman. It is man who has made him what he is. The popular idea that swine appreciate lemon rinds, orange peels and banana skins as a diet is one of the popular fallacies. The pig should have a clean, dry bed to sleep in, its pen should be kept clean and it should be properly fed." All of which is perfectly good pig farming, and its proclamation from Harvard will help some people to the truth, although the pig among his friends needs no crest.

Gather Up Some Money.

We suggested last week that to get anywhere with the realization of fair agricultural credit in California it is necessary that all our agricultural clubs and societies, small and great, get busy with discussions which promote a general understanding of the matter and what it is necessary for each man to believe and do toward the realization of it. If any reader has a notion that money will be flung down upon us by a sun-spot, as Father Ricard's rain-storms are, he may as well purge himself of that notion at once. Money is the product of work. Just as a man may fill his own pocket with wages or with profits on things made or grown for sale, so a group of men assembled in an association may assemble money, money of their own and money which is to rent, by earnest and persistent work. When this money is their own savings or profits it is a question of thrift whether any accumulates or not; when the money is rented, the rate depends largely upon what the owner thinks of you and your job. Making money available for agriculture is then a two-fold effort; getting a grip on your own pocket and getting an arm firmly but lovingly around the other fellow's neck. In neither of these is a man wholly sufficient unto himself; that is, disregarding misers, a man can save his own money better if he is associated with savers, just as surely as he can part with it more easily when he is associated with spenders. Therefore, men must get together to save. Beyond individual savings, the experience of Europe clearly shows that a man alone can never impress money owners with his desirability as a borrower as a group of men of the same quality and the same purposes can do and have done. Now, to make these truths operative, work must be done. It may be exhortation and demonstration; it may be the securing of laws which will enable associations of savers to receive deposits and make loans of their own money, etc. Whatever laws now exist under which this business could be done should be studied to determine their adequacy, and if not adapted to the problem new laws must be secured. European countries have whole law books full of laws to help farmers finance themselves and establish credit. It will take work to find out just what we have and just what we need, and no State in the Union has more able lawyers in participation or sympathy with agriculture than California has. They will work like beavers whenever their fellow farmers come together and ask this public service of them. Then there is work to be done to shape public opinion on this subject of fairer rates and terms on money for agriculture, and in this beneficent work farmers' organizations should labor with social, economic and political associations to secure their serious consideration of the many questions involved. One state-wide organization, the Commonwealth Club of California, has already entered this field on its own initiative, because it counts it of the broadest industrial significance, and has a committee, headed by our leading agricultural economist, Edward F. Adams of San Francisco, conducting a special inquiry

into agricultural credit conditions in California. Every other public welfare organization in the State will follow this lead if the associated farmers of California call upon them for it. This effort for favoring public opinion requires work from those in the farming interests and all their societies should take it up.

Top Money and Bottom Money.

We started the foregoing paragraph with a definite and specific suggestion in mind, but tripped into a generalization. We have to begin over. Every farmer is watching now to see how soon the top water will reach down to the bottom water and thus insure a season's thrift on field crops or fruits which are grown without irrigation. When top and bottom water join, everything is ready for the reciprocal action of capillarity and gravity which do subterranean ragging with each other to the continuous joy of thirsty rootlets. Of course, sometimes a cloud may burst over an area of wash soil and gravity alone may soak the whole mass to the bedrock, but sand and gravel cannot hold the moisture, and drouth soon follows drenching. Enduring and adequate moisture is the product of ground water and cloud water acting together, and bottom water is the earth's welcome to the rainfall and at the same time its guaranty of efficiency. So it is with money; the money which is in a man is the surety that he can use in a business-like way the money which he reaches for. At the same time the money which he has brings other money within his reach. It was for an ignoble purpose that Iago cried to Roderigo: "put money in thy purse; follow these wars"—but the advise is just as good for an honorable enterprise. If our agricultural organizations are to turn the trade in money to their advantage, they must first gather money of their own. The modern agricultural use of money began that way. The first thing the handful of German farmers, who started a credit society sixty years ago, did was to put up a little silver, getting a little interest thereon and loaning the accumulation at a fraction of a per cent more to fellow-members who needed to use it. This method is still extant and in operation. California farmers will never have to do it in such a small way as those German peasants did, but the principle still lives and has vivifying power. Every association should gather money from its own membership; every non-profit organization should accumulate money. If there are no laws to authorize and safeguard such accumulations, let them be made. Just as soon as this is started these organizations begin to have power and they insure the lives of the organizations themselves. Anyone is apt to get weary of membership in a society which only talks and resolves, perorates and philanders; but fill the society's purse, begin to do some business with its funds, and its members will stick like flies to a sugar-bucket. Therefore we say to the California farming clubs and societies, exchanges and associations, begin to think concretely; see what it is necessary to do to add deposit and loan features to your organizations. Do not wait for a lot of smart financial Alexanders to offer you slots to put your money into. As soon as you begin to handle your own money for your own purposes, all the world will have money for you to handle in the same way. That is the universal European way.

Queries and Replies.

Deep Plowing in Old Orchard.

To the Editor: I have an orchard of apricots, prunes and peaches. The soil has never been plowed at a depth greater than six inches. Would it be advisable to plow ten or twelve inches deep, providing three feet should be left on either side of the rows with a plowing of not more than six inches? A theory has been advanced to me that the roots of the trees should be thinned out the same as the limbs and that consequently the roots which would be cut off by deep plowing would not impair the condition of the trees, but on the other hand would tend to benefit the trees. This idea hardly seemed logical to me and I would greatly appreciate any suggestion you might give. —Grower, Hollister.

Without assenting at all to the story that trees which are growing moderately and bearing well need root thinning, it may be truly said that deeper plowing can be undertaken in the way you suggest without injury to the trees, providing too many large roots are not encountered. It would be wise to start in as you propose, and if too many roots are encountered make the plowing a little shallower. Small surface roots need not be considered, but large roots cannot be too frequently interfered with without injury to the trees. The benefit to the trees would consist not in root removal, but in laying a foundation for better cultivation afterward, which would conserve more moisture for the use of the trees. It is not at all necessary, however, that orchards should be capable of being plowed ten or twelve inches deep.

Grass for Hillsides.

To the Editor: What kind of grass would do well in the Napa hills, which have been burned over? The soil is red and black.—R. L. A., Atlas.

Unless the land is somewhat moist in the summer by seepage from higher lands, it is idle to think of getting a stand of perennial grasses on it without irrigation. The annual plants which compose most of the California rainy-season pasturage, and dry feed after that if not overstocked, are self-sown. You will get a lot of them soon in spite of the burning, for they come from the seed each year and the fire has not killed it. You can improve the pasturage by scattering wild oats, burr clover, alfilaria, and in that way assist in multiplying good plants, but for sod-grasses, such as they have in rainy-summer regions, you cannot get them on dry lands without water.

Irregular Imperial Prunes.

To the Editor: In the winter of 1897-98 I set out an orchard of 25 acres of Imperial prunes, 24 feet apart, interplanted with apricots, half of the latter having since been pulled up. At the same time I planted 15 acres immediately adjoining, with the same varieties of trees. Neither of the orchards bore until the owners began to spray for thrips, and for the last two years to irrigate. The 25-acre patch had two years ago a heavy application of complete commercial fertilizer. The 15-acre patch, from which all the interplanted apricots were removed, has now for three years been paying handsomely. The 25 acres bear almost nothing in the way of prunes, the only crop being where the apricots are interplanted. The apricots bear satisfactorily. Can you make a long-distance diagnosis? I am frank to say I cannot here on the ground. The owner has somewhere seen some account of the benefits of root pruning as applied to apple trees, and is in the notion of trying it in the shape of a subsoiler, cutting off the shallower roots. The largest trees are the laziest. If root pruning with a subsoiler is to be recommended, when should it be done, how deep and how far apart should the subsoiler furrows be, assuming that the subsoiler is not to be run in each plow furrow?—Reader, San Jose.

We are unable to submit confidently any suggestion concerning the interesting behavior of the trees. Whether the presence of the apricots induces fruiting of the prunes because free wood growth is interfered with through root crowding in the soil, or whether it is possible that the prunes could be pollinated from the apricot, are merely conjectures between which we cannot intelligently choose. Burbank has shown that the prune and apricot can be successfully crossed. Therefore, in a wide way, the apricot might induce bearing in a plum which is somewhat self-sterile. This, of course, is presuming that the blooming of the two is, in some measure at least, synchronous. If the trees fail to bear because of excessive vigor in wood growth, the treatment would be summer pruning or root pruning or slack cultivation, all of which would have a tendency to reduce the vegetative energy of the tree. Root pruning should be tried first with a single run of the subsoil plow with sharp cutting edge midway between the rows of trees, and this plow should run as deeply as it can go, considering the available drawing power of the team. The whole proposition is one which must be worked out by several experiments as indicated.

Sunburn on Olives.

To the Editor: Will you please inform me the best application to put on olive trees where the trees have been neglected for many years and the bark on the body peels off in many places? Otherwise the trees seem to be holding their own. —Subscriber, Oroville.

It is probably caused by sunburn. Remove all loose bark and whitewash thoroughly and keep the bark whitewashed wherever direct sunshine can strike it.

The Filbert in California.

To the Editor: Is there any information to be had regarding the filbert in California? I will be grateful for any information you may be able to give me or put me in a way to acquire.—K. W. C., El Monte.

Continued experience indicates that the filberts, both the Spanish and the English cob nuts, are not successful in California. They have been freely tried for the last forty years and no one has reported satisfactory success.

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Review of Pruning Principles.

[By the Associate Editor.]

The following is only a general review of pruning principles for readers who frequently write and ask about beginner's problems. It cannot touch some of the finer points that are very important but which can be gathered by experience, close observation and attention to discussions in leading agricultural papers, which frequently put new light on old subjects. The best single way to learn pruning is to get in the orchards of the most uniformly successful orchardists and get a few suggestions at first hand. The more of this kind of information secured the better. A detailed written description with illustrations, as is given in Wickson's "California Fruits," will also have a high cash value to the beginner, unless, with fool's luck, he has his trees pruned properly without knowing why.

The time of pruning of deciduous fruits in general is now, or from the beginning of dormancy until the sap begins to rise. This pruning is invigorating to the tree, while other pruning, though occasionally valuable, is weakening, if anything.

The well pruned tree in outline is vase shaped, wide on top and coming down with an even slope to the trunk. As a rule it is also low headed. The object is to have bearing wood all along the main branches. Such a tree gives convenience in cultivation, thinning, harvesting and all farm operations, being besides a heavy carrier of fruit, which it has more strength to carry than trees pruned otherwise. An aim should be to keep the tree from becoming dense, in other words, to let in enough light and air to give a sturdy growth and lots of fruit all through the center, and yet not to take enough out to cause sunburn.

Neither a study of a tree before pruning alone or after pruning alone will show pruning methods as well as a study of good trees after pruning and before. The first will show how a tree will look when properly pruned, the second how it will and should develop during the next spring and summer. Reverse the process of examination in an orchard being pruned to learn what wood to cut away.

An important point is the encouragement of uniform bearing. Everyone will decide that a tree with so little bearing wood that it will make undue wood growth and produce too little fruit is poorly pruned. An equally true point is that a tree with too much bearing wood for its strength is poorly pruned. An equally true point is that a tree with too much bearing wood for its strength is poorly pruned, though it produce a "bumper" crop, for this results in weakened vitality for the following year. The proper amount of bearing wood to leave can readily be determined. It is a well known fact that Oriental pruners can discourage an orchardist whose orchard they wish to lease by making fine-looking trees which will not bear, then after they have the lease for a term of years they can keep the bearing wood exactly proportioned to the extreme strength of the tree and get a few heavy yields, but leave the orchard completely exhausted when the lease is out. This merely illustrates the possibilities of an intelligent proportioning of fruit wood to tree strength, and how well it can be done.

For the shaping of a young tree little can here be said, though the subject is discussed thoroughly in "California Fruits" and is indicated in requirements for a bearing tree. An examination of a well shaped bearing tree will, in fact, be an indication in methods of pruning young trees. It is the first three or four prunings that mainly govern the shape of the trees thereafter.

When it comes to the different fruits and varieties in a fruit, radically different methods have to be adopted according to the vigor of growth and method of bearing, which is clear without explanation. Vigorous growers like peaches and apricots require different pruning by far than the pome fruits, apples and pears, which, after getting into shape and bearing, set fruit on the same spurs one season after another, or from the prune, which has more the apple method of growth and bearing. The latter require little more than thinning for light and air, as a rule.

Vigorous growing fruits, like peaches and apricots require to be kept growing, and growing is increased by shortening or cutting out wood growth. The weaker the tree the more cutting back is needed and the fewer shoots to be left, while a very thrifty tree can have more shoots left. Whatever number of shoots are left, they should be evenly spaced for light and air. Cutting back should be done to laterals, preferably outside laterals, and shortening usually to outside buds, and when shoots come out at the end of a branch, only about two or perhaps three should be left, and these so they will not crowd. Every shoot and branch everywhere on every tree should have enough light and air to keep thrifty. Otherwise it should be cut out.

Weak or diseased and dead wood should always be removed and its presence is a sign of poor pruning. Where cutting of large branches is done, the wounds should be covered with white lead and oil.

Trees like prunes and apples which do not require shortening have as a large part of their pruning the bodily removal of wood from the trunk or branch from which it starts, just as surplus shoots are removed from peaches. It is largely by this method that sufficient light and air is let into the tree. Thus the French prune is largely thinned by the bodily removal of branches from the trunk. Evidently (in line with recent discussion in these columns) similar thinning of brush at the ends of branches and moderate shortening of such wood would give bearing wood all over the tree and more and better fruit.

When a branch has to be removed the tree can stand it better usually by taking it bodily out than half out, leaving the parent stem smooth and covering the wound to prevent decay. Bearing cherry trees are not pruned, but when, through die-back or other cause, trimming is needed, it should be down to the trunk or branch or to very strong lateral, at least, otherwise the dying back will continue. Few trees, in fact, can stand to have stubs left.

With nearly every kind of tree, the younger it is the more main branches it will have and the more bearing wood in proportion to space.

The amount of detail possible about pruning is unlimited, especially when the numerous fruits and varieties are considered. However, for a brief summary and generalization the following are important rules to note.

Decide on the general shape of the tree as has proven best for variety and climate, and shape tree thus. Keep proper amount of light and air so that bearing wood will be thrifty in all portions of tree. Regulate amount of cutting to vigor of tree and extent of bearing desired—the greater the thrift, the greater the wood to be left. Too open a tree is to invite sunburn, too dense a tree insures failure. Success can be obtained only by careful observation of successful prunes, of differences according to variety and by careful study from every quarter. The possibilities of failure through ignorance and of profit by knowledge of the needs of one's trees should keep everyone looking for new light and information on the subject.

CALIFORNIA CHERRIES.

To the Editor: Will you give a few facts regarding cherry culture as now being carried on in your State? I wish facts under two main heads, namely, the sweet and the sour cherry industry. Under each of these heads I would like to know: How many acres of each are under cultivation. The approximate number of trees in each. How large a crop and its approximate value. How much is canned or sold on the retail markets. The extent of the culture for commercial or home use. R. C. W.

Madison, Wis.

[There is only one head to the California cherry business: sour cherries are not grown to any commercial extent. According to the best estimates available, there are about 650,000 cherry trees covering say 8,500 acres, which would give about 77 trees to the acre on the average. There is considerable difference in distances of planting, but this figure is about right for an average. Average production would be about 150 pounds to the tree, and an average value of 6 cents per pound wholesale. Some old trees have borne and are still bearing immense products. There is one trees with a record crop of 1100 pounds, but a considerable part of the planting is rather new, therefore a low average is given. The sale to retail markets is relatively small because of our limited population in California. Not less than three-fourths of the product is sold to canneries or shipped to Eastern markets. The amount of cherries produced by the consumers for home use is practically negligible, it is so exceedingly small, because the area of cherry growing in California is quite restricted by the requirements of the trees and it is therefore not widely planted by amateurs. The sour cherries would have a much wider range, but they are less popular than in the East because we have so many other fruits ripening in the cherry season.—Editor.]

IRRIGATION AND FROST INJURY TO CITRUS.

[By the Associate Editor.]

In line with the discussion of frosts and northern oranges in our issue of November 29, is the subject of the effect of fall moisture and cover crops to frost injury of citrus trees. With many growers of oranges in the great central valley, cover crops have been very popular and are yet, though a belief is arising that perhaps, after all, the growing of a cover crop in most central and northern California citrus groves is somewhat risky.

To get the vetch, fenugreek, or other vegetation started well, the ground has to be kept moist into what would otherwise be the dormant period of the tree. Now, although the dormant period of the tree comes early in the north, it need not do so, and if the soil is well supplied with moisture, growth will continue vigorously well into the frost period, and then the tree stands a big chance to get hurt. Nearly every year trees are nipped on the few tender shoots around the edges, though matured wood is tough as oak, so to speak, and by keeping growth going the injury is intensified greatly, whereas normally it is absent, for the nipping of a shoot or so does no harm at all. Plant a cover crop and get it going nicely and the danger of frost injury, if temperatures drop very low, is intensified, for the tree grows and remains somewhat tender.

Probably the worst burned grove in the Lindsay district is well located and surrounded by uninjured groves. The trouble apparently was due to trying to get a heavy growth of barley between the trees. It is figured that the same expenditure of money and labor on stable manure will be better for a grove and much safer than the growing of a cover crop. Perhaps so, perhaps not, but the subject deserves consideration.

The matter of fall growth is closely related to northern lemon production. The lemon is a very tender tree at the best, but the tenderness is increased by the fact that the lemons are not harvested until very late fall or early winter, and culture methods have to be modified accordingly. Growers have decided that in order to have this fruit progress properly, moisture is needed. By providing this moisture, wood growth continues also, and so greatly increases the susceptibility of the tree to frost injury. Possibly no more moisture is needed than for an orange tree, possibly it is possible to give only enough for the fruit and to allow the wood to go dormant, but the problem has been difficult of solution thus far with a number of growers. However, few lemon trees were killed last January, though nearly all were cut back a good deal and quite a few in not especially favored situations matured lemons this fall, even though cut back, and in other years they have paid excellently.

Northern lemons mature their crop all at one time normally, picking being done in the late fall, and total yield is much below that of equally good groves in districts where the fruit picking is more or less continuous. However, after the su-

preme test of last year, northern lemon growers greatly favor this fruit in the most favored situations and claim that by moderate smudging far greater yields may be secured and more continuous picking obtained; in other words, the gross receipts can be almost doubled, and better than that with net receipts.

The experience of normal years with no smudging done justifies this opinion. More continuous cropping is probable from the fact that heavy blossoming frequently comes in the late fall while at the same time young lemons the size of marbles are on the tree. These are both usually killed by the frost, but could be saved by smudging as they are in leading southern lemon groves with just as low temperatures and as many of them. Being saved, the continuous bearing tendencies of the lemon and heavier bearing would be greatly developed. Under all events, however, with lemons as well as oranges and pomelos, fall moisture control to govern the wood growth is an important point.

Strawberry Culture in Orchard.

[Written for the PACIFIC RURAL PRESS.]

Although strawberries are one of the most expensive crops to raise and market that are grown, they are also one of the most profitable ones to grow in the young orchard, providing the soil and market conditions are right and that a good supply of irrigation water is available.

Driscoll brothers, of Irvington, who are perhaps the largest strawberry growers in the Bay Counties region, have found this practice to be one of the best ways of land development, as they receive large returns from the berries for the first four years, and by that time the orchard is almost ready to start bearing.

Their ranch at Irvington, which is only one unit of their strawberry holdings, contains 130 acres of rich black alluvial soil. Their ultimate aim is to plant the entire place to almonds and apricots, the trees having been grown in a nursery on the place; but in the meantime a good-sized yearly revenue is being realized from the 30 acres planted to strawberries last year. Later planting of berries will be made until the whole ranch is into berries, which will at the same time be maturing the almond and apricot trees.

As their experience in the Watsonville district has indicated that strawberries will not do well unless planted on new ground, the berry side of the ranch will be discontinued after all of the acreage has been cropped for four years, the life of one planting.

To raise and market so many berries, the laying off of the land for convenient irrigation, a good water supply, and lots of labor are the most essential points.

On account of the long distance to water on this place, the irrigating is more complex than that generally seen, as the water has to be lifted 130 feet and then carried in a pipe-line a mile, where it empties into small wooden flumes which convey it to the different patches. Two-inch holes are bored on one side of these small flumes wherever the row is to be made, and opened or closed with a small galvanized sliding gate. In this way there is very little water wasted, and the work of irrigating is confined almost entirely to opening the small slides until the desired amount is running.

After the land has been plowed and scraped and a good grade for irrigation obtained, the rows are marked off from 20 to 24 inches apart, a furrow being left open every second row for irrigating. In this way level-topped ridges are made and the one furrow supplies water for two rows of berries, the plants being planted 16 inches apart in the rows.

The picking season usually lasts from the first of May until the middle of October, and during that time this year with so much dry weather the patch was irrigated once a week, so it can easily be seen why a good irrigation system is necessary.

The labor problem, which is usually a big factor in berry culture, is greatly simplified on this place as the firm has the distinction of being the only producers of the well known Banner berry on the Coast, and as a result obtain a much fancier price than most growers.

By having this monopoly, so to say, they are always able to find large numbers of Japanese who will rent the patch on shares, the owners to furnish the land, water and plants, while the renter furnishes the labor, for which he is allowed 50 per cent of the net returns.

It is the aim to have a tenant for each acre and a half, as during the picking season the patch has to be gone over every three or four days, besides being irrigated all over once a week, and one man cannot take care of more than that much land, in fact, during the heaviest part of the picking season outside laborers have to be hired by the tenants. All of the tenants are furnished a place to live by having a large community house where each one can do his own cooking.

As the Banner berry is exceptionally large and a heavy bearer, they produce after the first year as high as 300 cases which are usually sold for an average price of $5 in the city markets. While all berry growers do not realize such handsome returns as the above, they are undoubtedly a good paying crop for the orchardist to grow between the young growing orchard.

Although it is true that the main business of this company is the raising of berries for the market, it may be seen that their methods could be applied, in a smaller way, to any orchardist who has an easy working rich soil not too far from a market.

POINTS ON OLIVE CULTURE.

The wonderful prices for pickling olives and the favorable outlook for the industry make the matter of olive planting important to everybody with good olive land. An interesting point regards the advisability of planting in block or orchard form, or simply as borders for an orange or some other grove. Orange growers favor olive borders, as soil and climate for citrus success are related closely to the needs of the olive. Furthermore, it is always a question if olives do not produce better in borders or alone than in block form. Generally it is believed that they do. The advantage, if any, is due to greater amount of light and sun getting to the tree.

This question is open to doubt under some conditions. Olives are planted around a young orange grove of W. A. Bohland, Lindsay. On the street side to the east there are two rows of olive trees, and on the south side, where there is no travel, eight rows, the trees being 24 feet apart. A decided advantage is noted on the olives on the south side. The owner attributes the lessened productivity of the others to the dust from the street blowing over the blossoms and hindering pollination, for the olive blossom is a very tender thing. If this condition continues, he will oil the road to keep the dust down to complete the experiment.

Good success has been had with fertilization. The trees are five years old and very thrifty, having been large when planted and being well cared for. Great wood growth tends to prevent fruit setting, while lots of phosphorus and potash is good for fruit development. Mr. Bohland wanted all the fruit possible and was afraid big wood growth would prevent, so applied commercial fertilizer at the rate of two pounds of sulphate of potash and five pounds of superphosphate from rock to the tree to four rows on the side, leaving four rows for a check. A decided difference could be noticed at picking time to the eye between fertilized and unfertilized rows. Along the dividing line the fertilized tree on one row seemed to produce much better than the tree opposite that was unfertilized in nearly every case. The crop on fertilized rows was estimated at two tons per acre, apparently running, by caliper measurement in the orchard, about 70 or 75% pickling olives, over 11/16 inch in diameter. The trees were, however, exceptionally large for their age. They were Mission variety.

Pruning had been done by cutting back new growth half to two-thirds to give a spreading tree and keep the upper branches from running far heavenward. D. J. W.

FERTILIZING GRAPE VINES.

To the Editor: Last spring I planted in nursery form St. George resistant grape vine cuttings, which are now rooted. Which would you advise: to graft in the nursery this season or plant out in vineyard and graft next season.

Also I intend to use a little commercial fertilizer for my young grape vines—1, 2 and 3 years old. I thought to put a little near each vine and cover it up several inches deep. How much would you put on each vine, and what do you think of it? I do this to stimulate growth. Do you think it a good plan? Also would from now on be the time? My soil is good; some adobe. The replies to the above will be greatly appreciated.—Reader, Concord.

Graft in the nursery, by all means: vineyard grafting is more difficult and the stand is apt to be irregular. If any reader dissents, he has the floor.

About two pounds of commercial fertilizer per vine is a good amount to use. It should not, however, be put too close to the trunk. Better if none came nearer than a foot. The benefits can be told better a year after fertilization than before applying and a good rule to go by is: Whenever the trees, vines or other crop do not come up to fullest expectations and should, fertilizing probably will be profitable. Whenever vegetation flourishes vigorously fertilization will probably not be necessary. When in doubt use some, as most farmers are inclined to overestimate the thrift of their trees. A good mixture for your case will be 4% nitrogen, about one per cent being from nitrate and 3% organic, 2% potash, and 8% phosphoric acid. This combination is a good one for growth. The more recent investigations are in favor of applying fertilizer in the fall before complete dormancy starts. If too late for this, apply with spring plowing or soil preparation, which is the usual time of application.

BLOOD PROTECTION AGAINST RABBITS.

Every year requests in large number come in for some preparation that will keep rabbits from gnawing the trunks of young fruit trees. Whitewash with tallow or some other form of fat that will become ransid and disgust the rabbits is the most common recipe advised.

George W. Beale, a fruit grower near the Buttes in Sutter county, has had excellent results with beef blood. The account in a local paper telling of this says: "The pests have girdled a large number of young trees and the owner has fenced and dogged and poisoned and trapped until he is tired. He has at last hit on a scheme which he believes will solve the problem, and he says he will build no more fences, maintain no more dog packs to chase away the varmints, nor will he spread any more poison about. He has procured a spray pump and by the use of it paints his trees with beef blood." (We don't see the advantages of a pump over a paint brush, but maybe the reporter guessed a bit.)

"He says that the smell of the blood so scares the rabbits that they go a half mile out of their way to get around his place. Mr. Beale has experimented with this blood spray and has watched the effects and is convinced that it is entirely efficacious."

POLLINATION OF WINTER PEARS.

The subject of proper varieties of winter pears recently brought up by L. E. Blochman in these columns makes interesting an item appearing in the Livermore Herald. This states that H. Miller, who has an orchard on the Arroyo Valle, has a very choice variety of winter pears named the Eureka. This is in great demand in city markets (it is stated) but has been a very shy bearer. The account further states that Mr. Miller ascertained long ago that this drawback was due to lack of pollination. He tried to remedy the trouble by keeping bees, but found that it was only partially successful. Then he discovered that near a block of Winter Nellis pears the Eureka bore well and consequently is planting Winter Nellis among his Eureka trees, though it is too early to get any definite results.

The matter of cross pollination as an incentive to bearing is one of the most important points in horticulture and great progress is possible with further investigation.

How Fruit Trees are Grown.

[By the Associate Editor.]

Horticulture has reached a high standing in California. In a way the foundation of the industry is in the nursery, for that is where the trees come from, and it is necessary to get the proper stock for the soil conditions and vigorous bearing wood of proper type and variety and type above the ground. Poor nursery stock may also ruin an orchardish, the right kind may mean a good deal more profit than ordinary trees.

The nursery business has reached a high position in California and a person can be quite sure of getting the right kind of trees from our leading nurseries. Although no one district has a special advantage for nursery product over many other districts, Fresno county is the headquarters for more large companies than any other place, and methods generally have reached a high standing.

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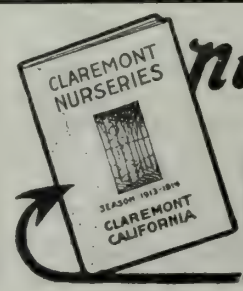

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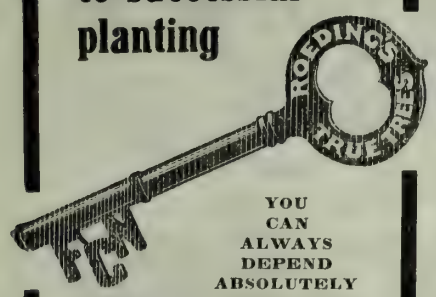

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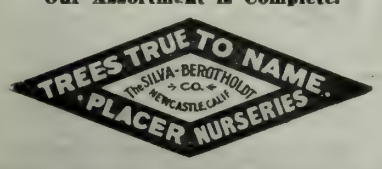

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in the industry. The Kirkmans have been in the nursery business for 26 years, most of the time at Merced, though for eight years headquarters have been at Fresno, Wm. T. Kirkman, Jr., being in active management the last few years. To give an idea of the scope of the work of this one company it can be said that something over 200 acres is in nursery stock at their home place in Madera county, 17 miles north of Fresno, and that there is in addition 60 acres in nursery stock near Orosi, Tulare county, 30 acres at Banning, Riverside county, and also nurseries for citrus and other trees requiring mild winter temperatures at Fair Oaks, Sacramento county, and in the foothills of Fresno county.

On the Madera county ranch one looks out at this time of the year over more than 2,000,000 young trees and 1,000,000 grape cuttings. There are here in round numbers 1,000,000 peach trees (seedling or grafted). 150,000 apricots, 200,000 almonds, 200,000 myrobolan seedlings, 200,000 pears, 75,000 apples, 40,000 walnuts, 40,000 olives, 150,000 figs, and the grape cuttings noted before. In the Orosi nursery are a million more trees, grown in about the same proportion, while the Banning nursery is given largely to apples and pears.

KEEP MOVING.—It is necessary in the nursery business to keep moving in order to have good clean land on which to raise clean trees. The nurseryman finds what he wants, raises a crop of trees and then goes on to another place. He could perhaps raise his trees and then plant the land to beans or alfalfa or something that would let the land freshen up again and lose any injurious features that had developed, and in a few years raise another lot of trees, but the safest and best thing under present conditions is to get new locations every two or three years. The development work is not lost by any means, however, for the usual procedure is to plant young orchard at the start and when the nursery is given up this is approaching bearing age and being on first class land and having been the best kind of attention for several years, the land will have increased greatly in value. The

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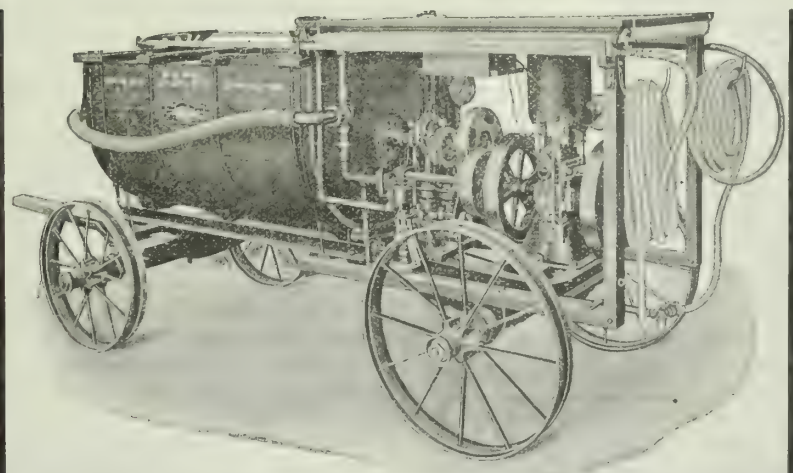

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fine ranch in Madera county shown in the illustration was thus raw land three years ago.

Nursery land always has to be about the best. It must also be uniform in quality, for land richer in spots than others will give an uneven lot of trees. Also some soil that is too rich in certain kinds of plant food and too poor in others, especially potash, the great material for making fine, well ripened wood, may give a very rapid wood growth which is not of a firm, good quality.

Nurserymen look all over the State before choosing a place for a nursery, and this was done in the case described, with the Madera land was the choice. This is a sandy soil deposited by Cottonwood creek and is uniform throughout. In the choice of a nursery location, however, it is not essential that the soil be either light or heavy. A medium or even heavy loam is entirely satisfactory, if it is rich and uniform enough.

IRRIGATION.—One of the most highly valued features on this place is the irrigation system. The water is developed from wells and is lifted by centrifugal pumps, a total flow of approximately 2800 gallons per minute being secured. The water is distributed through concrete irrigation pipe of the kind that is commonly used in many citrus groves. This water is run in small streams down the rows of nursery stock and 150 such rows, each a half mile long, can be kept going at a time.

Such method of irrigation gives a much more uniform and thorough irrigation than would flooding or the use of a large head at one time and place. It reaches the roots quietly, and there is not the disturbance to roots and soil that flooding would give, followed by the kind of cultivation that would be necessary. It is believed that this method of irrigating on account of the lack of soil and root disturbance has solved the root knot and crown gall problem, one of the greatest troubles the nurseryman has, as crown gall is a bacterial infection of injuries to roots and root hairs, and practically no chance of infection is given this way. Results seem to justify this idea and further results are awaited with interest.

SELECTION OF WOOD.—If a man wants to grow good trees, he has both the top and roots to select. Where plants are grown from cuttings as with figs, olives and grapes (unless resistant stock is used for the latter) the selection of the cutting from fine growing and producing wood alone is necessary, for root and top are from the same source, but in grafted or budded stock there is first the selection of seed or seedlings, and then of the budwood.

The rule with seeds is to get most vigorous variety and most vigorous individuals in it if possible. For instance, with the peach, which is the most common seedling grown, nurserymen select varieties of peaches that grow most vigorously. The Salway is thus the general favorite, though seeds from mountain peaches of North Carolina are used on this nursery in larger quantity that the Salway, as the company believes it makes a more vigorous stock.

The vast number of peaches grown will have been noticed from the tree census of the Madera nursery given earlier. The reason is that the peach is often used for nearly all of the stone fruits, almonds, plums, prunes, and apricots being frequently grown on peach root in certain soils, so the big proportion of peach trees does not mean that so many peach trees will be planted. The bitter almond also is occasionally used for other fruits than almonds. Apricots are also grown on apricot root, the peach apricot seed being used in this case. Outside of the peach the myrobolan is the standard stock for plums and prunes, and these are imported from Europe and budded here, for the

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SEND FOR THIS BOOK TODAY

Now is the time of the year to place orders for plants and trees. And remember that when you order seeds, plants and trees of any description from C. C. Morse & Co., you are getting the very best obtainable.

We are Headquarters for Alfalfa and Grass Seeds.

C. C. MORSE & CO.
Largest Seed House on the Coast
117 Market Street
San Francisco

Now Is The Time To Plant **TREES**

Millions of Dollars

are paid to fruit growers of California every year and still the fruit industry is in its infancy—An orchard planted to the proper varieties will produce

A Splendid Income

provided healthy, vigorous nursery stock is used. We have a fine assortment of first class deciduous and citrus fruit trees; also ornamental and shade trees and cordially invite your inspection. Call and talk it over with us, or write for our 1913-14 catalogue.

SMYRNA PARK NURSERIES, Inc., Ceres, Cal.

NATURE'S CROP PRODUCER

Hydrated and Ground Carbonate of **LIME** Send for Free Booklet

AGRICULTURAL DEPT., UNIVERSITY OF CAL., REPORTS:
"Action of LIME on SOIL—Neutralizes acidity, releases potash, aids in forming humus, aids bacterial activity, aids growth of legumes, flocculates clay soils, makes sturdy trees, increases fruiting, hastens maturity of fruit, makes fruit sweeter, makes soil phosphates available."

PACIFIC LIME & PLASTER CO.
807 MONADNOCK BLDG., SAN FRANCISCO.

FLORIDA SOUR ORANGE

SEED-BED STOCK grown without shade, as are ours this season, are vastly superior to those grown under shade.

GROWN OUT DOORS

They are all hard wood, have a magnificent and abundant fibrous root system and, being grown in the sun, will stand up well when transplanted in nursery row. We have the largest Citrus Seedling Nurseries in the State, as well as a good stock of budded trees, Navels, Valencias, Lemons and M. S. Grapefruit. Order now.

SOUTHLAND NURSERIES, F. H. DISBROW, Proprietor.
2141 East Colorado Street, Pasadena, California.

What's in the Soil?

There's nitrogen, phosphoric acid and potash in your soil. Every pound of butter, bushel of wheat, sack of potatoes or bale of hay you produce and ship elsewhere, takes some of these soil elements away. Every horse, cow, sheep or hog that you sell also carries away a certain quantity of these same vital elements. Each crop produced eats up some of the raw materials in the soil.

You must have those raw materials or you can't go on producing. You must replace the vital elements taken away by the crops or live stock, else you get poor crops and no profit for your labor.

Science has discovered how to replace those elements, what to put into the soil to make it continue to produce profitably. It is simply to put back what was taken from it.

In our packing plant we have a by-product called "tankage"—the bones, blood and refuse from slaughtering. The animals consumed the forage from the soil containing these vital elements. When dried, ground and blended in scientific proportion with potash, the result is a fertilizer which again releases the soluble elements in the soil that produce profitable crops.

The materials in "Gold Bear" animal fertilizers are FROM and OF the soil—they go back into it to again do their work as no other materials can do.

In the blending a different formula is used for different needs. Tell us about your soil; what crops you have raised; what crops you want to raise—and we will tell you what formula you should use.

PURE ANIMAL MATTER AMMONIATES

GOLD BEAR FERTILIZERS

FOR CALIFORNIA SOILS

Write for the Fertilizer Book, Free.

Western Meat Company

704 Townsend St., San Francisco

HARDIE SPRAYERS

The Sprayer with the trouble left out.

Power Sprayers, Barrel and Bucket Pumps, Rods, Nozzles, Hose, etc. Catalog.

POINDEXTER & SNITZER, State Agts. 320 Market St., San Francisco.

climate of interior California seems entirely unsuited for the growth of myrobolan seedlings. Pear seedlings are also imported from Europe and Japan for the same reason, though we cannot go into detail on these matters.

An interesting point relates to the fig propagation. Ordinarily those like olives, are propagated direct from cuttings. The Kirkman Nursery has endeavored to combine the vigor and root strength of the Mission with the quality of the Smyrna and grafted Smyrna on Mission root. The expense naturally is greater than simple cutting propagation, but all fig authorities highly commend the proposition. The Black Mission used for this and for direct propagation comes from the famous Kelsey grove in Merced county.

SELECTION OF BUD WOOD.—After the root the most essential point is the selection of bud wood, for on this depends the nature, quality, productivity and trueness to desired type of the fruit tree that is to come. All reliable nurseries give great care to this subject. This nursery has arranged for bud wood with orchardists whose trees are nearest perfection in type and vigor and the bud wood is selected not only from the orchard, but from trees in the orchard that have borne the best and have been under careful observation.

EFFECTIVE CONTRACT METHODS.—When all is said and done on any business it is the application of methods that count, the way the work is actually done. Labor problems are the big problems and these are solved here in unique and effective manner. Japanese are the nursery workers of California and most California fruit trees are grown by some sort of contract.

Some contracts throw all responsibility on the contractor; he may be furnished the bud wood, seeds or seedlings, land and water, etc., but otherwise works on his own plans and risks. Contracts of some kind are necessary for the Japanese as a day laborer for a white employer is a fizzle. The contracts are in force here, but the direction of the nursery company is absolute.

A contract is given a man or several to raise so many trees or do such and such a thing on a piece of land. The nursery foreman has the direction of the work, he says when water shall he put on or taken off, and how; he sees that cultivation is done properly and the same with budding and every other sort of work. There is no opportunity to take a holiday if the work would suffer and when the contractors need extra help they hire it. By this method the Japanese work their best, but the nursery sees that methods are as they should be and the quality what it should be. Danger of mixing varieties and making mistakes that could not be detected of the contractor directed his own work and had only to deliver finished goods is avoided and, incidentally, the trees can be produced for less than under the common method of contracting.

This is only a hurried sketch of nursery methods and is not meant to cover the whole ground even in general. The business is kind of a gamble, for the nurseryman in planning his work has to forecast demands at least a year and maybe three years before sales are made. Yet he cannot keep trees past the proper time to sell them, and big crops or poor crops, high prices or low prices for various fruits all send growers first one direction and then another, in a way no man can foresee.

The nursery business is essentially an intensive business. The expense per acre is enormous, and irrigation, cultivation and all the finer points of tree production have to be attended to perfectly if success is to be achieved. But just as California horticulture has attained world wide fame, so nursery methods have advanced to be one of the most specialized and highly developed forms of fruit production.

A new book that tells you how to care for and feed YOUR CROPS

It's Free

WE have recently issued a book entitled "The Care and Feeding of Crops", written by P. L. McCreary who was for five years chemist in the fertilizer department at the California Experiment Station and for three years engaged in soil and water work for the United States Reclamation Service.

Mr. McCreary has made a thorough study of Pacific Coast soil conditions and is an expert on fertilizers and fertilization.

Do you know that a big crop draws out of the soil practically all of the available plant food and that it takes two years or more of weathering action to put the soil into a condition so that plants can get the necessary food from it? Do you know that there are ways to get a big crop every year?

This book illustrated with remarkable photographic reproductions is written so that you can understand every word of it. Every page will give you valuable practical information. You can't afford to be without it. Write for it today. A postal card or a letter will bring it to you absolutely without any obligation on your part.

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GAVIOTA FERTILIZER

THE PACIFIC GUANO & FERTILIZER CO. SAN FRANCISCO, CAL. HIGH GRADE TRADE MARK

Our Services Are Free

We have the best equipped and most up-to-date Soil Laboratory on the Coast, with a staff of skilled and experienced Agricultural Chemists.

We will make, without charge, the analysis of any soil a customer may send us, and give full advice as to what are its needs in the way of a fertilizer.

OUR SPECIALTY: BONE AND BLOOD FERTILIZERS.

Write for Booklet.

CALIFORNIA FERTILIZER WORKS,

444 Pine St., San Francisco

Fruit Trees! Fruit Trees!

Fruit and Nut Trees, Ornamental, Evergreen and Deciduous Shade Trees, Berries, Grape Vines, Flowering Shrubs, Palms and Roses. The best that care and experience can produce.

Northern California Grown

Write and get our prices. You will find them as reasonable as any, considering the quality. Remember a cheap tree is dear at any price.

CHICO NURSERY CO.

Phone 170. Cor. First and Cedar Sts., Chico, Cal.

MARTINEZ NURSERY

ESTABLISHED 1884.

Offers the following varieties in strictly No. 1 Trees: 25,000 Bartlett Pear, 10,000 Apple (leading varieties), Autumn and Winter Pear, also Plum, Prune, Peach, Apricot and Almond Trees, Grape Vines, Ornamentals, etc. Price List on application.

THOS. S. DUANE, Prop.

Martinez, Cal.

AGRICULTURAL REVIEW.

Citrus Shipments Heavy.

Citrus shipments from Tulare and elsewhere have been heavy. Lindsay expects to have 2300 cars go out, or 300 over first estimate. Half of these are away already. Strathmore will ship out 100 cars this year, making it sixth in importance of Tulare citrus points. Cool nights have caused coloring to progress rapidly, and the fruit has also sized up well. It is stated that oranges rushed from Florida and the West Indies to beat out California fruit have been small and of inferior quality and injured prices somewhat.

Orange prices for a number of southern points are beginning or will start very soon. Prospects are good for a much better crop than was expected. The auction market at Los Angeles opened December 1.

Such success from orchard heating was obtained at Pomona last January that 1000 volunteers have registered their willingness to help fight frost in case of emergency.

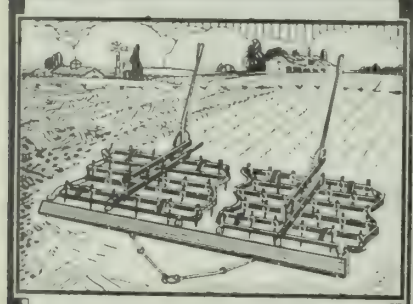
The olive crop all over the State is rivaling the citrus crop in interest at this time. Everywhere large yields and big sizes are reported with prices very high.

Special efforts are to be made by the Weather Bureau in southern California to issue frost warnings. Reports on orchard temperatures will be given also. More frost protection than ever before used is being prepared in the Tulare citrus district.

Deciduous Fruit Progress.

The Associated Raisin Co. has added to its scope the purchasing of raisin equipment for growers, and offers trays, lug and sweat boxes at prices 15 to 20% lower than have ruled. Payment can be made out of next year's crop.

An effort is being made to have the



Harrowing

is one of the most important acts in the proper preparation of the seed bed—and it is equally important that you get the right kind of a harrow.

While nothing is more "harrowing" than a poor or unsuitable harrow—the right harrow will greatly multiply your profits by an increased crop.

We carry a complete stock of all kinds of Spike Tooth, Spring Tooth and Disc Harrows which have been used most successfully in the West and will be glad to furnish you full information and advise with you about your requirements.

THE HARROW SHOWN ABOVE

—is our No. 3 Mathews "U" Bar Spike Tooth Drag with side guard rails. It is made of special size and exceptionally strong materials. Easily adjustable to exactly the right angle for your particular soil at each particular time and to meet each particular condition. Made in five sizes and sold at low prices.

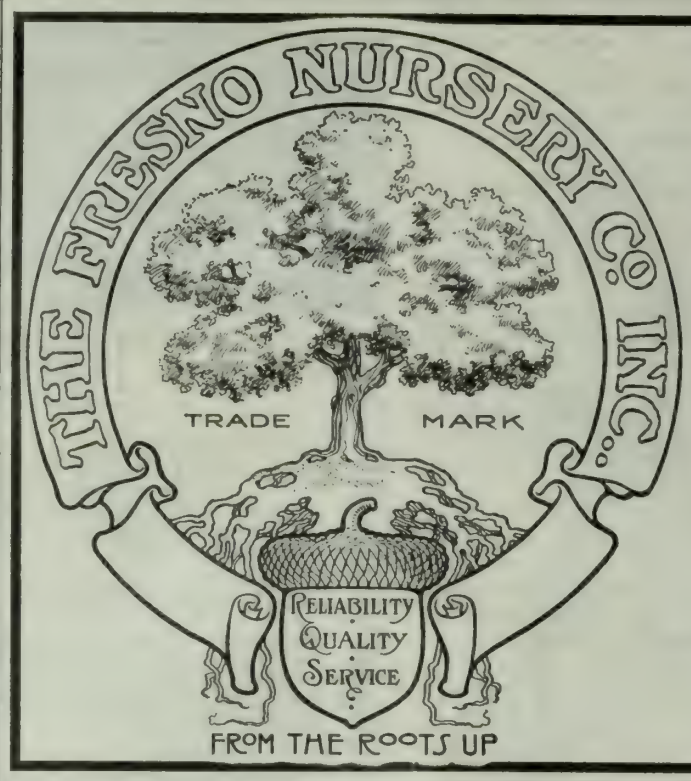
Ask us about the No. 3.

Newell Mathews Company

Harrow Specialists

Established 1886

LOS ANGELES STOCKTON
California



The Fresno Nursery Co.

F. H. WILSON, Pres. CHAS. A. CHAMBERS, Sec.

LEADING GROWERS OF GUARANTEED

NURSERY STOCK

"From the Roots Up"

APPLE, APRICOT, PEACH, PEAR

TREES

GRAPE VINES, ORANGE, LEMON

TREES

Price list and information free. Write us your wants. Address our firm at

P. O. Box M 615, FRESNO, CAL.

Our High Quality Nursery Stock made Fresno Famous.

SANITARY FERTILIZER

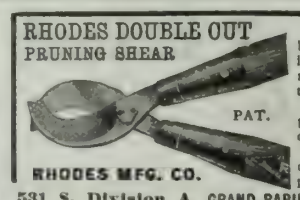
The only fertilizer made that is free of fats and oils, and is odorless.

25% cheaper.

Send for pamphlet and analysis.

SAN FRANCISCO DISPOSAL CO.,
Evans Ave. and Keith St., San Francisco.

RHODES DOUBLE OUT PRUNING SHEAR



Cuts from both sides of limb and does not bruise the bark. We pay Express charges on all orders. Write for circular and prices.

RHODES MFG. CO.
531 S. Division A, GRAND RAPIDS, MICH.

If you want the best
TREES
WRITE FOR PRICE LIST
UNITED FRUIT CO.
NEWCASTLE, CAL.

REDWOOD TANKS

I sell to the consumer. Box shook and Boxes, Trays, Lumber, Millwork, Doors, Windows, Moulding, Wagon tanks, Spraying tanks. Independent.

R. F. WILSON, Stockton, California.

$1420 from 133 J. H. HALE Peach Trees This Year

" . . . from one measured acre of 133 trees we picked, September 14th, 748 bushels, or an average of 5½ bushels or 8 crates per tree, over 95% of this fruit being high class merchantable fruit, selling f.o.b. at the farm at $2.00 to $2.50 per bushel . . . "
(Signed) J. H. HALE—in his report on his 1913 crop.

(Figuring on the basis of 95% of the crop from this acre, at the lower price of $2.00 per bushel, the figures quoted above are had.)

Why Such Profits Are Possible

The J. H. Hale peach is 1-3 to 1-2 larger than Elberta; extremely juicy; golden yellow flesh, brilliant carmine skin; meat is solid as a cling, yet a perfect freestone; round shape, excellent for preserving; stands shipping much better than Elberta; ripens a week earlier and hangs longer on trees; skin smooth and thick—**almost fuzzless;** hardier in wood and bud than Elberta, Georgia Belle or other hardy peaches; healthy, vigorous grower; withstands severe drouths and still fruits enormously.

And these features, embraced in one peach for the first time in horticultural history, have made the J. H. HALE the greatest commercial peach of America.

You can obtain genuine J. H. HALE peach trees, propagated from buds cut from Mr. Hale's bearing orchards only from William P. Stark Nurseries, Stark City, Mo.

To be **sure** of your trees order now. Hundreds waited last spring until we were oversold. Don't let **yourself** be among the disappointed this year.

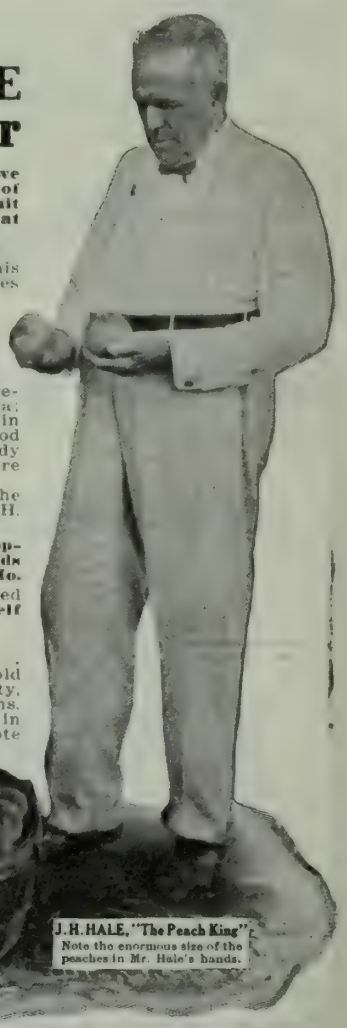
Save ½—Buy Direct—No Agents

We have no agents, no salesmen. Every tree is sold direct to you from our great nurseries at Stark City, Mo. Thus you save 30% to 50% in agents' commissions.

Our catalog is our only representative. Prices are in plain figures—lower than you expected to pay. Note the saving under what tree-salesmen ask you. And you get better trees.

Write for New Catalog

Describes and prices J. H. Hale peach trees. Delicious, Stayman, Black Ben and all profitable varieties of apple, peach, plum, pear, cherry, apricot, quince trees, grapes, blackberries, raspberries, gooseberries, currants, roses, shrubs, ornamentals. Famous Stark-Ozark grown. Doubly guaranteed true to name. Send for the new catalog today. 120 pages, illustrated.



J. H. HALE, "The Peach King"
Note the enormous size of the peaches in Mr. Hale's hands.

William P. Stark Nurseries
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ROCHE HARBOR LIME

excells all other for Spraying. Free from grit. Will not precipitate while in solution. Will not wash off when applied. Universally used for all purposes. Handled by all dealers.

Tacoma & Roche Harbor Lime Co.

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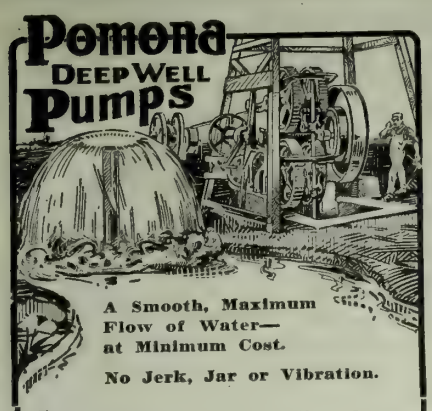
Sempervirens Cactus Farm

JOHN ZUUR, Prop., Santa Rosa, Cal.
Ask for 1914 Catalogue.



A Smooth, Maximum Flow of Water— at Minimum Cost.

No Jerk, Jar or Vibration.

IF you have a deep well and are contemplating a deep water lift, it will pay you to come to Pomona and study conditions in this valley. No other section in California has spent as much thought, time and money on the question of deep well pumping, as have the fruit growers of Pomona and other nearby sections.

A deep well pumping plant calls for a considerable expenditure of money, and there are several vital points to be taken into consideration other than the pump itself. For instance: Who makes it? How long have they been manufacturing it? What do you know of its efficiency through those who have used it?

The best way to get this information is to obtain it at first hand, so we repeat and urge upon you very strongly to visit Pomona. If you can't come and will give us some details of your problem we will try and place in your hands such information and evidence as will be most helpful to you.

POMONA Manufacturing Co
Pomona, Calif

We also make a full line of Gates and Valves for cement pipe irrigation.

San Joaquin Valley Agents:
PEASE-BUNDY-TAYLOR CO., Porterville.

"MARSHALL" STRAWBERRIES.

Fine strong plants. Now is the time for Winter Planting. Address A. G. CARY & SON, Edmonds, Wash.

Fresno Weather Bureau station install an electric siren that will carry sound 30 miles for use in sending frost warnings over the raisin district to protect fruit and vines in spring.

A car of Emperor grapes from Sanger sold in Minneapolis for $2604.

W. I. Newcomb and Al. Garcia, packing house managers of Sebastopol, recently visited the Northwest to investigate apple grading machinery and methods.

One hundred acres of peaches are to be set out by Claude Congdon of Hemet.

The Cloverdale Grape Growers' Protective Association is to meet to discuss the work of the California Grape Growers' Association, December 6.

Big Poultry Business.

Eggs and poultry products generally have been keeping strongly in the public eye recently. Prices have broken all records in San Francisco and also have been so variable that charges of price manipulation have been made. A meeting was held in San Francisco by the Poultrymen's Association of Sonoma county to show the consumers that present methods of egg marketing were unfair and to ask for more direct dealing between producer and consumer. In Chicago and elsewhere clubwomen instead of making things better for producers and themselves by preserving eggs when they were cheap, quit using eggs to knock prices down as far as they could. The Housewives' League has called for a national boycott along similar lines.

The turkey shipments for Thanksgiving were large. Ukiah claims to have shipped 28 tons. The Tulare Co-operative Association shipped 4 tons. In the Fresno Free Market a big turkey business was done, prices being about 20 cents live and 25 cents dressed. In one morning $1200 worth of turkeys were sold.

The poultry shows are now at their height. The Stanislaus Association had an excellent show and fixed the date for the next at December 2 to 5, 1914. A show will be held at Coalinga, December 18 to 20, 1913.

Officers of Farmers' Union.

The officers of the Farmers' Union, most being re-elected at the San Jose meeting last week, are: President, Wm. McNaught; vice-president, J. E. Lowery, of Napa; secretary-treasurer, Fred Millard, of Los Gatos; executive committee, H. C. Shagen of Rucker, D. M. Utter of Campbell, and Massey Thomas of Gilroy. L. Woodward, of Campbell, is chairman of the executive committee. A campaign was started to secure a fruit experiment station for the Santa Clara valley.

THE "NEW-WAY" RAPID POWER SPRAYERS

For the Average Fruit Grower

"New-Way" No. 2 Rapid Sprayer, equipped with 2½ H.P. engine; 150 or 200-gallon clear cypress tank. When truck is not ordered, outfit is equipped with false bolster to fit any wagon.

A high duty guaranteed outfit.

For the Large Fruit Grower

"New-Way" No. 4 Rapid Sprayer is a high pressure machine especially adapted for large orchards. Equipped with 3½ H.P. "New-Way" engine. 200-gallon clear cypress tank. Carries 4 Bordeaux nozzles.

Insure your future profits.

For the Small Fruit Grower

"New-Way" JEWEL Power Sprayer, equipped with 1½ H.P. "New-Way" JEWEL engine and 150-gallon clear cypress tank. For young trees and small orchards. Light and very economical.

AS NECESSARY ON EVERY FARM AS A PLOW.

The "New Way" Skid Outfit is also very popular. Designed to set in a wagon box and used with barrel or home-made tank. Compact, serviceable and very efficient. Sure, reliable and guaranteed.

"New-Way" Sprayers are easy to operate; they work perfectly and maintain uniform pressure. Sure, reliable and fully guaranteed.

JOHN DEERE PLOW CO., San Francisco

A POST CARD will bring our beautiful Sprayer Catalog No. S 120

Double Crops in Bottles

Science has brought many things to the farmers and horticulturists who will accept them, but nothing of as great importance as the easy and inexpensive introduction into the soil of nitrogen-gathering bacteria.

FARMOGERM

is the trade name of the most practical and reliable culture of bacteria, and its application will not only supply deficient soil with nitrogen, but increase the tonnage of the crops a hundredfold and more.

Without and With Farmogerm Inoculation
Drawn from photographs of Alfalfa in adjoining fields.

ALFALFA PEAS CLOVERS
VETCHES BEANS FENUGREEK
SWEET PEAS ALL OTHER LEGUMES

Simple to apply before seeding, and costs only $2.00 per acre, or $9.00 for five acres.

Write for free special booklet to Dept. O

All leading seedsmen endorse and sell Farmogerm

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Established 1871
326-328-330 SO. MAIN ST.
LOS ANGELES, CALIFORNIA

Fortify Your Fertilizer

Did you see your fertilizer dealer and arrange to buy fertilizer containing at least as much

POTASH

as Phosphoric Acid? That is the real kind that pays you and the dealer. If you did not, you should at once ask your dealer to carry Potash Salts so that you may increase the Potash in the ordinary brands. To increase the Potash 1 percent, add 40 pounds Muriate or Sulphate of Potash to a ton of goods. A 200-pound bag will increase the Potash of a ton 5 percent.

Try it once and see how Potash Pays.

If your dealer will not carry Potash Salts, write us for Prices. We will sell any quantity from one 200-pound bag up.

GERMAN KALI WORKS, Inc., 42 Broadway, New York
Chicago, McCormick Block New Orleans, Whitney Central Bank Bldg. Atlanta, Empire Bldg.
San Francisco, 25 California Street Savannah, Bank & Trust Bldg.

FRESH HORSE MANURE

As a fertilizer contains Nitrogen, Phosphoric Acid, Potash, creates Humus, is a soil corrector and will assimilate any fertilizing element that may be contained in the soil. To insure prompt delivery, book your order at once. Write or call on us.

COW MANURE. SHEEP MANURE.

PACIFIC MANURE AND FERTILIZER CO.,
429 DAVIS STREET, SAN FRANCISCO, CAL.

Nevada Range Sheep in Winter.

(Continued From Page 529.)

cicutarium), a kind of wild geranium. The seeds germinate in early autumn and attain a growth of from one to three inches. This before winter growth, however, is flat on the ground and not easily grazed. On the opening of spring the plant grows to a height of several inches and is at its best at the lambing season, when it is highly prized. The woolly sunflower (Wyethia mollis) was abundant, but the dried leaves were not eaten. In fact, even in summer, only the flowers and the very young leaves in the center are eaten under ordinary feed conditions. On places where the sagebrush had been burnt off a considerable quantity of a native wild phlox (Phlox stansburyi) still had several inches of green on the stems. All heads were down on such patches busy pulling off the shoots and stems close to the ground. The little black sagebrush (Artemisia rigida) occupies large areas on flats or rolling foothills of firm stony ground. It is not eaten to any extent, except after a rain, or when there is snow on the ground.

One night a coyote visited the bedding ground and bit two ewes. They had to be killed, and the carcases were cut up and put out as poison bait for the marauders. An incision is carefully made in each chunk of meat and a small portion of strychnine placed inside. If the poison were left on the outside, the coyotes would detect it at once and refuse to eat it. After eating poisoned meat of this character, the coyote immediately seeks water. On drinking the water the poison seems to be conveyed at once to a vital part of the body, as the animal is usually found dead only a rod or two from the spring.

Sheepherders sometimes make a considerable revenue from the bounty received for coyotes' scalps consisting of a pair of ears. These are presented at the county courthouse and paid for in cash. The skins are not saved, as they are pronounced of no value if taken from a poisoned animal.

It might be well here to call attention to the method of utilizing the springs. As the quantity of water flowing from a spring is sometimes quite limited, a series of troughs are constructed so as to prevent loss and to provide facilities for a large number of sheep at one time without polluting the water. The band only receives water every other day, so that the troughs have time to fill up again.

Another band visited in the same general region consisted of 2150 ewes and 47 bucks. On December 17th the sheep were driven to an improvised corral and the ewes separated from the bucks. Our illustration shows the buck band retiring for the season to the home ranch. One poor fellow was left behind suffering from a severe attack of blind staggers. The sheepherder was of the opinion that the trouble was caused by eating too much of a very saltly leafed plant, the spiny saltbush (Atriplex confertifolia) or "salt top," as he termed it, and then drinking too much water to quench the thirst. Should this have been the case then many more would have been affected, as this plant was one of the chief forage plants. The leaves and seeds are very similar in appearance, and most of them fall off and remain at the base of the plant on the ground. The sheep come along and lick them up in considerable quantities. One evening the buck died and not an atem of flesh or bone was left a few days after. The coyotes had even eaten the skin, but leaving the wool. This incident is interesting because of the real cause of the disease. It is said to be due to the presence in the brain or spinal cord of the gid bladder worm (Coenuris cerebralis), the cystic or bladder stage of one of the tapeworms (Taenia coenuris) infesting the dog. The eggs are scattered by the excrement of the dog and find lodgment in the grass or drinking water. The embryos are then swallowed by the sheep in their food or drink and make their way from the stomach to the brain in about eight or ten days. This irritation causes the sheep to wobble about and turn in circles as if giddy, and in severe cases refuses to eat or drink. It would be interesting to know whether the coyote can act in the same capacity as the domesticated dog in spreading the disease. Another animal, a ewe, was still alive, but as it was unable to move and we had to move camp we were obliged to kill her. She was very thin and had been without food or water for six days. On opening the carcass the stomach was still full of a liquid fluid, which seems strange considering the length of time the animal had been without water. The neck was swollen considerably and the liver discolored.

The next camp brought us to where there was a sprinkling of snow on the ground sufficient to cover the short bunch grass. The sheep now paid more attention to the shrubs for forage and especially to what is called hop sage (Grayia spinosa) because of the resemblance of the fruiting stage to a cluster of hops. At this time of the year, however, only the spiny branches were present with tiny green buds already in evidence for the next season's growth. The sheep ate this with relish, not seeming to object to the spiny tips of the branches. Another species of sagebrush (Artemisia spinescens) was also in evidence. It was only about six inches high and grows in somewhat sandy, flat, more or less alkaline areas. As it retains most of its leaves, it furnished good forage. The sheepherder was relieved by the presence of the snow, as the sheep ate this for water and enabled him to go where he pleased.

The social element was also to be reckoned with in this camp. Our camp-tender, a Frenchman, had constantly with him a small book which he studied persistently after meals and whenever time would permit. At first the writer thought it was a sort of Catholic prayer book and refrained from asking questions. Finally, however, his curiosity got the best of him and he ventured to ask. It seemed that our friend's ambition was to be a bartender—although he did not drink himself—and he was studying assiduously how to mix drinks fancy and otherwise. This about took my breath away, as his knowledge of English was of the broken variety. A few months after that he left the sheep and became a bartender in a French hotel. For several years he worked at this calling and saved sufficient money to buy out the proprietor, and today is considered well to do and a respectable citizen. When recently in the Senate of the United States our sheepherders were arraigned as a set of ignoramuses, we were reminded of this incident. Many similar ones might be cited, as a number of the leading citizens of Nevada, and we doubt not of many other States as well, were at one time just mere sheepherders. Caution is the by-word in democratic America when we begin to call down our fellow beings.

Leaving the north, we will travel south and east to the center of the great State of Nevada, to the so-called desert valleys where hundreds of thousands of sheep make their home every winter. Many of the valleys are of great size, often forty miles or more long and ten to twenty miles across. The floors of these valleys are covered almost exclusively with a hoary white shrub from six inches to a foot high, sending up a dozen or more tender shoots from a central basal stem. It is called white sage, sweet sage, or winter fat (Eurotia lanata) and belongs to the same family as our common pig weed or lamb's quarters (Chenopodiaceae). The leaves are narrow and about an inch long. Each stem ends in a spike or cluster of flowers. These are what botanists call unisexual, the male and female flowers being borne on separate parts of the stem or sometimes on separate plants. The seed part is covered with long white hairs. These remain on the plant for a long time and furnish the bulk of the forage As these flats are usually alkaline, the white sage which grows luxuriantly on them should be protected from overgrazing. Valleys that have been grazed for a number of years show a decrease in the height of the stems to about one-half. Both sheep and cattle do well on it, increasing in weight rapidly.

Big-Leaved Sunflower of the Sierra Ranges.

The grazing process is very simple: the sheep feeding in the valley and every other day driven to the nearest snow on the foothills, which they eat to take the place of water. For drinking water the sheepherder also uses snow which he packs to camp on burros.

The anxious time for the sheepman is when the snow has left the southern foothills and the weather is still unpropitious in the north. In traversing the intervening ridges he is apt to be caught in a belated spring snowstorm which may come with such violence and to such a depth that the sheep can neither retreat nor go forward. This is a pitiful sight. Whenever possible alfalfa is hauled to them or a road made, but more frequently hay cannot be secured and the animals perish from cold and hunger. This is one of the reasons why Nevada sheepmen did not want free wool, as many of them have passed through just such experiences with very heavy losses.

To conclude, we desire to emphasize the importance of the preservation of the native forage plants of Nevada, for even when all her available lands are put under cultivation, and all surface and underground waters developed, there will still remain vast areas of both mountain range and valley that can only be utilized for the raising of beef and mutton for the less favored States.

Importance of the Calf Herd.

[Written for the Pacific Rural Press by J. C. Loomis.]

While the value of a dairy cow depends almost solely upon her ability to produce at the milk pail, her power of transmitting this to the dairy calf is also of great importance, for it is the latter feature upon which the dairyman must depend for his future production.

In the past it has been customary for a large number of our dairymen to pay little or no attention to the dairy calf, preferring perhaps to deal with the present production rather than the future, but it has now become generally recognized that where one enters the dairy industry with a view of building up rather than of simply going on in the old rut, the one point that must receive constant attention is the heifer calf.

No other factor has played such an important part in changing this condition as the pure-bred herds, for they have demonstrated, through official testing, that a calf from a high producing and proven cow, bred to a sire with equally as good records back of him, is oftentimes, when two or three years old, as valuable as the dam herself.

Take, for example, a well bred grade cow that is valued at $100 or more, according to the demand and supply at that time. This cow would very likely produce 200 or more pounds of fat per year, which when sold at market prices should bring $60 or more, according to the production. Figuring in the value of the skim-milk and manure, this amount would be considerably more and would vary in different cases.

By breeding this cow to a pure-bred bull that has high producing ancestors back of him, it has almost always been found that the producing powers of the female offspring is greater than that of her dam. As most dairymen breed their heifers so that they will come fresh when from two to three years of age, it may be said that after the first calf has been dropped the heifer is worth more than her dam, providing, of course, that she is physically able to produce, and if she has been properly cared for the percentage of poor producers will be found to be very small.

It may be seen, then, that the dairyman who has properly bred the cow has not only been well repaid from the milk pail, but also from the calf pen, for while the dam is worth $100 or more, the heifer is worth still more, and the farmer has been well repaid for the feed and labor of raising the calf.

There are, however, still other reasons why it is profitable to pay considerable attention to the calf lot, for this value at two years of age does not end at that time, but continues for the entire life of the heifer as the increase in production continues to be a source of added revenue as long as she is able to produce.

What this increase will be varies with the individual, but in a great many instances it has averaged 50 pounds or more, and with butter-fat averaging 30 cents per pound, it amounts to a great deal when figured for the entire herd.

With the benefit of raising the heifer calf well in mind, the value of a pure-bred sire cannot fail to enter into the plan of building up the herd, for he is responsible for half of the calf crop, and unless he has good breeding back of him the offspring will not produce the extra amount above mentioned.

In reality most dairymen should attach more importance to the dairy sire than they do to the individual cow, for where the latter effects the production of but one calf, the former has 50 per cent influence over the entire herd.

The number of dairymen who have recognized the benefit of the better bred sire shows that the pure-bred animal is no longer used to satisfy an individual whim.

Oftentimes the reason for not keeping a pure-bred bull is that the dairyman does not think he can afford to pay the difference in price, but if a little figuring were done it is doubtful whether this condition would last long.

It is true that the first cost is somewhat more, but when one considers that many of our breeders sell their male stock at about $150 per head and that a grade bull would cost about $50, it is found that the difference is only $100, and when this extra cost is charged against three years' crop of calves it is found to be very small as compared with the benefits above cited.

Heifers Raised on Stratford Dairy Farm.

For instance, one may have a herd of 25 cows, to be used as a foundation for building up a young herd, and to do that he purchases a bull for $100 more than the grade would cost. As it costs the same to feed and care for both animals, the extra price must be borne by the heifer calves which average 50% of the total calf yield. For three years' service there should be about 37 head of heifer calves to bear the extra $100, or an individual charge of $2.70 apiece.

With an increase of $15 in production which has resulted from the small expenditure for the better bred bull, it can be seen that the value of the pure-bred bull is not overestimated, but, on the other hand, is not so generally recognized as it should be, and the man who is preaching for a higher standard dairy bull is aiding the industry far more than the man who stays in the old rut of continuing to use the scrub bull that has absolutely no merit back of him other than his ability to breed.

THE KIND OF PORK TO RAISE.

[Written for the Pacific Rural Press by J. C. Loomis.]

The growing demand for better bred hogs in this State indicates that farmers no longer fear the old tradition that as long as we do not have a corn climate we can never hope to cut much of a figure in pork production.

No other factor has aided the hog grower more in discarding this belief than the dairy cow, for with an increasing amount of skim-milk as a by-product, it has become necessary for dairymen to find a market for it, and the hog seems to be that market.

This is a fortunate thing in many ways, as an alfalfa pasture is the ideal spot for cheap pork production, and at the same time the land is improved by having more manure from the extra stock, but with an increase in production there is another factor which is beginning to demand recognition, and that is grain for fattening.

In the past this condition was as noticeable as at present, but was not given the consideration that it should receive, as there was no incentive in the way of better prices for the better article, and farmers, like all other producers, should have a better price for a superior product.

With the increasing demand for more meat, the packers have realized that to stimulate more and better pork production it was necessary for them to add a bonus for the well finished hog, and for that reason it is found that many of our hog raisers are paying more attention to the butcher's demand and feeding accordingly.

Just what this demand is may not be definitely known by a large majority of our farmers, for it is true that in the past the butcher has not shown a fair disposition toward the better fitted hog, preferring evidently to buy as cheaply as possible with no respect to the quality. However, the large shipments of smoked pork that come into the State yearly have awakened him to the fact that this bacon and ham could be profitably cured by him if the quality of pork would permit, and to get this better quality he has found that he must pay more for grain-fed stuff than for what is commonly called alfalfa pork.

As a result of this, some firms are in the field offering a bonus of from one-half to one cent per pound above quotation for the better fed hog. The quality of the meat in the grain-fed hog is not the only reason for a higher price, but the amount that dresses away as well, for instead of a waste of from 25 to 30% in butchering the alfalfa-fed hog, the waste is cut down to 10% or more in the grain-fed kind. In a word, the butcher now prefers a hog weighing from 175 to 200 lbs. that has received some grain as a part of his ration, and for that kind he is willing to pay a premium, not as a stimulus toward more pork production, but rather to supply his own demands.

Naturally, the question that interests the farmer is whether he can better afford to cater to this demand than to go on with the old method of feeding skim-milk and alfalfa alone, for these two feeds are always at hand and many times grain has to be purchased.

Those who have experimented with the grain-fed hog concede that it is more profitable, as they are able to raise such hogs to the desirable weight several months sooner in that way than they can the other way, which means a big enough saving of alfalfa and milk to more than counteract the cost of the grain used.

SWELLING FROM WIRE WOUND.

To the Editor: I have a horse that was cut on the front part of hind ankle with barb wire. The cut was some time healing up, and has left the ankle very much larger than before. I think possibly that there was proud flesh in this cut while it was healing over, which I think has caused his ankle to grow much larger than before. This has been for several months, and still he does not seem to be lame on it. Will you kindly answer me through the columns of your paper if there is anything I can use to reduce this ankle to its proper size.—F. L. C., Groveland.

Answer by Dr. E. J. Creely.

Apply the following after first clipping the hair.

Simple cerate, 4 ounces; Biniodide mercury, ½ ounce; Cantharides, 2 drachms.

Mix. After one month repeat.

San Francisco Veterinary College.

Put Alfalfa in Right.

(Continued From Last Issue.)

Much of the checking on this particular colony was at the time being done by men of little experience in the handling of the Fresno scraper. Such men found it impossible to do a good job of checking on the loose and yielding surface of deeply plowed ground, whereas they could make out fairly on the firm surface of land that was merely disked up a couple of inches. Therefore, as a practical proposition, in order to forward the work of the colony, plowing after checking and leveling was recommended, though the objection to it mentioned above was fully realized.

On the other hand, if plowing is done before checking and if there is much inequality in the surface of the land, the entire plow-slice may be scraped off in places by the building of the levees and the leveling up of the checks, leaving hard soil that may be difficult to work up into a good seedbed, especially in the dry season. In that case the obvious thing to do is to plow again, at least on the hard places, unless irrigating before seeding will soften them enough for good working with the disk. The main thing is to bear in mind the object of plowing, as outlined above, and to strive to accomplish this as thoroughly as possible.

PLOWING STRIP CHECKS.

Plow the land at least ten inches deep. The irrigation to complete the leveling will have left it in nice shape to plow even if there has been no rain. Caution must be observed to avoid destroying or disturbing the level of the checks.

To the inexperienced the simple and obvious way to plow would seem to be to treat each check as a separate land and to plow around it, throwing the earth to the levees and— but there's the rub! —leaving a dead furrow down the center.

That unfortunate dead furrow would be absolutely fatal to the level of our check, would, in fact, make the check itself a "dead one" as far as good irrigation is concerned, because the water would all run down the middle without spreading out to the sides. We cannot have it on any account.

Therefore if you are bent on plowing each check separately, at least start in the middle and back furrow so as to leave only a slight ridge in the center, which can be worked down with a harrow and smoother. You will still have a single open furrow on each side next to the levees, but by plowing shallower for the last two rounds these open furrows will be left small and can readily be filled up in cross harrowing.

A BETTER WAY.

A better way of plowing is to include two checks in a land, starting next to the middle levee, throwing the earth to it, and plowing around it until the opposite side of the checks is reached. Here again the precaution must be observed of making furrows next to the levees a little shallower so as, in a manner of speaking, to taper off the plowing toward the levees. The slight ridges and shallow furrows that will thus be left next to the levees can be effectively leveled up by cross-harrowing.

Some object to this method of plowing two checks at once because of the loss of time in dragging the plow around the ends. That is really not a matter to be considered as against the importance of maintaining the level of the checks, but for those who deem objection well taken there is still another method.

(To Be Continued.)

SWINE.

POLAND-CHINAS FOR SALE—Still have six 8-month-old males and five 8-month gilts for sale. Two of these gilts first prize winners at the Fair this year; as well bred and as nice as are in the State. W. A. Young, Lodi, Cal.

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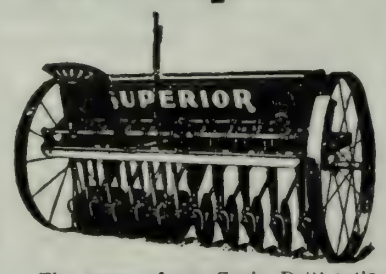

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Creameries Help Buy Cows.

To the Editor: I noticed in one of your late issues that there are creameries in Stanislaus county which furnish the ranchers with cows and take half of the cream check each month in payment for them.

As I am intending to go into the dairy business soon I would like to have you tell me the name and address of such creameries.—E. F., Amsterdam, Merced county.

Your letter was submitted to State Dairy Inspector C. A. Starkweather, of Modesto, who writes that "The Modesto Creamery, Stanislaus Creamery, and Western Creamery at Modesto; Ceres Creamery, at Ceres, and Turlock Creamery at Turlock loan money to patrons on their note, secured by a chattel mortgage on the cows, payments to be made monthly on said note—usually 50 per cent of the cream check due for cream sold to the creamery. The amount loaned per cow is usually obut $30 to $35 at 8 per cent interest. Notes are endorsed by creamery and deposited in local bank from whom patrons get the money. These terms are sometimes varied slightly according to the financial standing of the borrower, grade of cows and needs of dairymen for money at certain times for harvesting crops, etc.

It goes without saying that the borrower must be a patron of the creamery from whom the loan is secured and must so continue until all amounts due are paid.

Do not know if this practice rules on the west side of the valley or not, nearly all of their cream being sold as shipping cream.

WHO HAS ANGUS OR GALLOWAYS?

To the Editor: Do you know of any place in this State where one can purchase purebred Galloway or Angus cattle? If so, kindly let me know through your paper.—Subscriber, Plumas county.

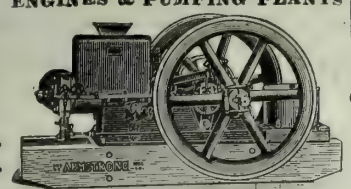
So far as we know there are only two herds of Angus cattle in California or Nevada and they are both owned by the Universities, but we do not know whether they have any stock for sale.

With the increasing interest that is being taken in purebred beef stock it would seem advisable for some one to take up the breeding of both of these breeds as well as Devon, as letters like yours are often received at this office and a breeder could, we believe, find a ready sale for young stock of either of the above breeds.

If any one of our readers know of any purebreds that we have not mentioned we should be pleased to hear from them and if anyone has such stock for sale he should make announcement of same through our advertising columns.

An incubator and brooder factory is to be started at Visalia.

ENGINES & PUMPING PLANTS



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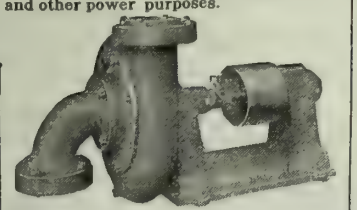

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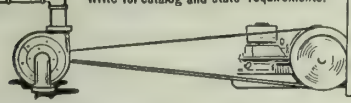

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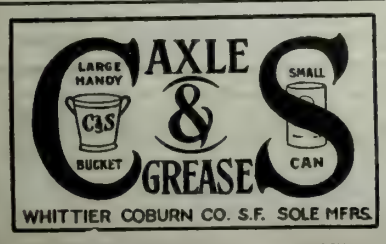

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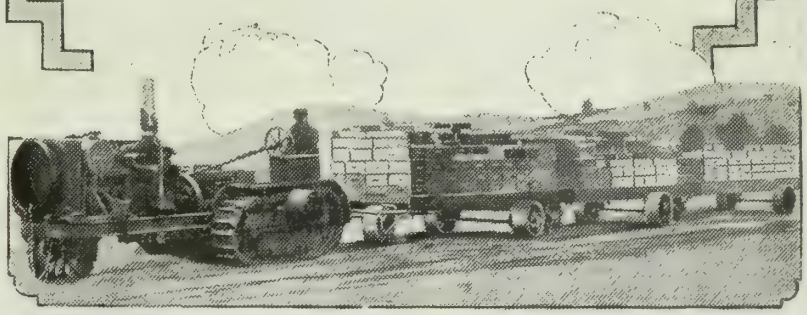

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is offering a limited number of heifer and bull calves for sale, sired by the famous bull, **King Polo of Bleakhouse**, out of some of the best individuals in the herd. Also a few two-year-olds bred to **King Polo**. All stock fully guaranteed. For particulars and pedigrees

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Improved machinery and methods enable us to sell you this pump for less than you can buy any other make.
Our retail prices are less than our competitors' wholesale prices.
We guarantee our pumps the equal in quality and capacity of any. Live agents wanted. Write for circular and prices.
PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

With the Live Stock Men.

A. W. Houston and Max Mewborn of Manteca, San Joaquin county, have purchased 20 head of registered Holsteins from the Yuba Dairy at Marysville. They will be used as foundation herds, having been divided into two herds by the owners.

A company of Italians from San Francisco have purchased 300 acres of the Bank tract located near Wheatland, which will be made into a dairy.

Plans have been made by the Western Creamery to ship all of the cream from the Winters creamery to their plant at Benicia.

Henry Olmstead has leased a piece of land near Porterville which will be used for wintering a string of his race horses.

It is said that buyers are paying as high as 13 cents a pound for stock cattle in Shasta county where ordinarily they buy at so much a head. Wilcox and Grover stockmen near Cottonwood recently drove 600 head of their stock to their valley ranch.

A report from Ukiah states that the prospects are for a hard winter on sheep and cattle in that section, as the rains were late in starting, the feed earlier in the season had been badly damaged by grasshoppers and the stock is in poor condition to stand the winter storms.

It will be noticed that there are two announcements in this issue relative to the sale of purebred stock from the Modesto section. Both Mr. Rhodes and Mr. Hillier are offering some individuals which should greatly aid in starting purebred herds. Modesto is keeping in the lead as a purebred dairy center.

A. W. Smith of Cottonwood, Shasta county, has purchased the ranch formerly owned by E. J. Foster and will develop it as a stock ranch.

According to W. H. Holt, State Sheep Inspector of Nevada, the sheep in that State are all fat and in good condition to go through the winter. He also reported that the stock has been in a good healthy condition during the entire season and that there have only been two cases of scabies come to his notice.

Moy and Devaney of Livermore sold 170 head of yearling steers last week to Henry Larkin of Colfax, Washington.

According to a report from Porterville, stockmen are looking for an extra good season in that section this year and if the weather continues to improve the range during the next month it is estimated that 10,000 head of cattle will be taken there for spring feeding. Shipments are expected to start to arrive about the first of the year for the range districts.

A new yearly record for the Ayrshires breed was recently made by the cow Auchenbrain Brown Kate 4th, owned by P. Roberts, Jr., Pennsylvania. Her yearly record was 23,022 pounds of milk, 917.60 pounds of fat and 1,079 pounds of butter. The best previous record was that of Lily of Willowmoor, who produced 1046 pounds of butter. That this breed is fast proving its worth is being demonstrated by the amount of testing that Ayrshire breeders are doing.

That some attention must be given Argentine beef in the future was shown last week when the government ship Culgoa, was stocked with Argentine beef at something more than a half cent less than American packers were able to contract for.

Peter Moy of Livermore bought 500 head of cattle from P. Connolly, which will be taken to Mr. Moy's West Side ranges. E. F. Callaghan of the same place and C. G. Owens have purchased 1200 head of breeding ewes from the Ryan Flock, and will run them on ranges they have leased in Corral Hollow and elsewhere.

From present indications there will saan be feed to spare for all kinds of live stock on the west side of the San Joaquin valley. Already there is an abundance of green feed for sheep and the more prominent sheep and cattlemen who have had to look elsewhere for feed are planning on returning with their stock at an early date.

Dr. O. A. Longley of Stockton, will deliver an address at the annual convention of the California State Veterinary Society to be held at San Francisco, December 10.

Cattle shipments are under way from Glenn county, seven carloads having left there last week from the Clark Mitchell herds near Hamilton City.

A report states that near Dry Meadows on the Kern river, there is ten inches of snow and that every indication is for an excellent lot of range feed there for next year.

There were more medium-grade quality cattle than top stuff, at the Portland Union Stock Yards, last week. Best streers sold at $7.50. Cows were of poor quality, selling at $4.50 to $5.75. Calves ranged from $6 to $9, according to weight. Bulls featured from $5.50 to $6.25. There was a big run of hogs the first of the week, but prices held steady at $8 and closed at that price. The receipts of sheep were somewhat small, but made up in quality. Prime ewes brought $4, choice wethers $4.75 to $5, and $6 was bid for exceptional quality lambs.

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The Pacific Pipe Co.'s pipe has such a wide reputation for value that some dealers have been led to stultify themselves and mislead the public by trading on the popularity of no name. They obtain samples of our material in some indirect way and then make a flaring announcement to sell them at ridiculously low prices.
When you are offered pipe at ridiculously low prices by such dealers you'd better go slow.
The object may be to get you to figure on good material and then to deliver you an inferior pipe.
The safe way is to buy only from the Pacific Pipe Co.
We appreciate the confidence which the public feels in us and in our goods, and we make this announcement to enlighten you and to prevent deception.

PACIFIC PIPE CO., Main and Howard Sts., San Francisco.

Breeders' Sales.

This column is open to purebred breeders of all classes of livestock and is run as often as we have a sufficient number to warrant the space. Those having made sales are requested to send us the name of the animal, registration number and name and address of purchaser. When such sales are reported we will gladly give them mention free of charge. The following sales have been reported since our last issue containing this column.

BERKSHIRES.

H. G. Armstrong, Woodland, sold to J. W. Considine, Woodland, 7 sows and 1 boar; Pacific Portland Cement Company, Consolidated, Cement, 5 sow pigs, 1 bred sow, I bred gilt, and 3 open gilts; H. C. Hinkley, Grafton, 8 sows and 1 boar; Verdi Lumber Co., Verdi, Nevada, 1 boar; R. R. Potter, Kenwood, 1 boar; Morris Inglin, Grafton, 1 boar and 2 sows; G. Tomasini, Suisun, 1 boar; C. E. Finney, Suisun, 1 boar; R. B Canfield, Santa Barbara, 1 bred gilt and 1 boar; Shasta Springs Hotel Co., 1 boar.

Mr. and Mrs. C. E. Rand, Santa Rosa, sold to J. C. Polhey, Windsor, 1 boar; W. L. Cunningham, Windsor, 1 boar; also 1 collie dog to Claude Stark, Morganhill; 1 dog to John Zuur.

HOLSTEINS.

Floribel Farming and Cattle Co. Hardwick, sold to S. E. Railsback, Hanford, Prince Segis DeKol; Anthony Ranch, Artesia, Peter Segis Pontiac; Antone Joseph, Conejo, James Segis Pontiac; G. C. Aydelott, Hanford, Henry Segis Pontiac.

E. J. Weldon, Sacramento, sold to Mrs. Frank McKee, Central Point Oregon, bull Sir Korndyke Wayne 46050, also three 2 year old heifers sired by Sir Jetske Johanna Posch; to R. F. Wilkerson, Lodi, yearling bull Pennant Pietertje Beets and also 10 head of grade yearling heifers; to R. L. Oliver, Dorris, bull Pennant Sir Charles Beets and 40 grade heifers.

HEREFORD CATTLE.

Simmon Newman Co., Newman, sold to Joseph Bertatta, Douglas Flat, 1 yearling bull; Realto Malspine, Douglas Flat, 1 yearling bull.

DUTCH BELTED CATTLE.

U. G. Strader, Ceres, sold to H. P. Mohr, Pleasanton, 2 heifers; Dr. J. H. Shirley, Fresno, 2 heifers and 1 bull; M. E. Gomes, Ceres, 1 bull; W. L. Tippins, Nichalons, 1 bull; Mrs. B. M. Allen, Honolulu, Hawaii, 1 two year old bull, 2 two year old heifers and one yearling.

POLAND-CHINA SWINE.

A. M. Henry, Farmington, sold to Portland Ranch, Lancaster, 5 boars and 62 sows; Langdon Merl Co., Modesto, 10 sows and 1 boar; Harry Cross Heber, 10 sows and 1 boar; D. C. Vierra, Moss, 1 boar; Patrick Doyle, Verona, 1 boar; Thos. M. Horgan, Redwood City, 1 boar; F. L. Jelly, Jelly, 1 boar; C. A. Thayer, San Francisco, 1 boar; C. E. Batdorf, Oakdale, 1 sow; C. A. Anderson, Arbuckle, 1 sow and 1 boar; W. H. Hord, San Francisco, 10 sows and 3 boars; R. N. Flower, Copperopolis, 1 boar; J. M. Miller, Grand Island, 1 boar; R. D. Kneckerbocker, Oakdale, 1 boar; W. J. Fanning, La Grange, 1 boar; Mrs. N. H. Cuddeback, Brownsville, 1 boar; Preston School of Industry, Ione, 1 boar; Henry Struve, Watsonville, 1 boar.

W. A. Young, Lodi, sold to J. B. Moor, Modesto, 1 sow; C. A. Stowe, Stockton, 1 boar; A. C. Weaver, Anderson, 1 bred sow; A. J. Miller, Davis, 1 boar; W. R. Thomasson, Cottonwood, 1 bred sow and 1 boar; C. C. Councilman, Cottonwood, 1 boar; A. E. French, Lincoln, 1 boar; O. T. French, Elk Grove, 1 boar and 2 sows; Preston School of Industry, Ione, 1 sow; T. P. Baker, Brentwood, 1 boar; F. J. Jensen, Anderson, 2 sows; J. M. Posey, Lodi, 1 bred sow; W. Baker, Thornton, 1 boar; R. S. Clark, Elmira, 1 bred sow; C. O. Dustin, 1 bred sow; J. W. Wakefield, 1 bred sow; H. J. Knowles, San Francisco, 8 bred sows; C. E. Batdorf, Oakdale, 1 bred sow and 1 boar; J. W. Dobbins, San Francisco, 1 sow and 1 boar; J. P. Thorell, Roseville, 1 boar; S. M. Carey, Santa Cruz, 1 boar; Herbert H. Hill, Santa Cruz, 1 boar.

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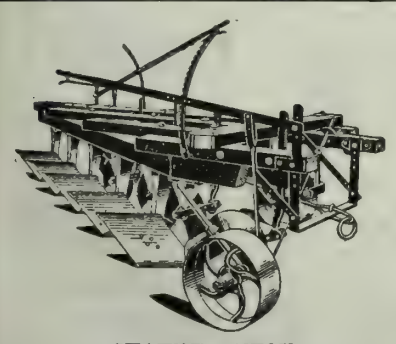

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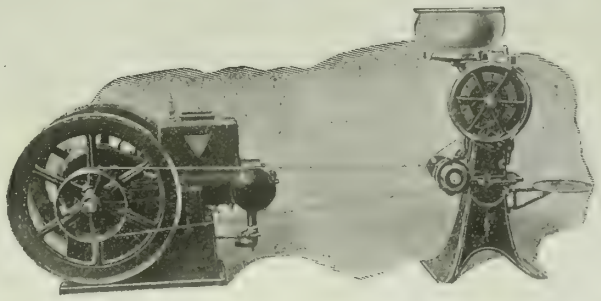

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6 Pure-bred Heifers (Heavy Springers).

1 Bull, 1 Heifer. All carrying the best blood lines of the breed.

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WOOD COLONY

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BOSTROM IMPROVED

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which has TELESCOPE enabling you to read the Target over 400 yards away, and
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your land properly, and save surveyor's fees. It is sold by up-to-date hardware and general merchants everywhere, and guaranteed to be the most
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outfit ever made for all farm work. If your dealer hasn't one in stock, he will order for you from a nearby hardware jobber.
Write today for description of Level, and details of our MONEY BACK GUARANTEE.
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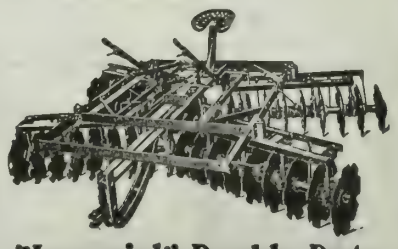

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It isn't a question of whether you can afford one, but whether you can afford to do without one.
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Wholesale Distributors.

The Alameda Poultry Show.

[Written for the PACIFIC RURAL PRESS.]

The first impression of a strictly poultry show is that there is a great deal more to poultry raising than it is possible to conceive of on the average farm where the chicken is rather thought of as a side line, and that every farmer who keeps a bunch of chickens should visit his nearest poultry show at least one day and more if possible.

Evidently a great many near-farmers, as well as farmers themselves, find the time spent at a poultry show well put in, for the attendance at the 10th Annual Alameda County Poultrymen's Association show, held in Oakland from November 25 to 29, showed that a great many who went to hear the cock crow were city people.

The show itself, however, was more interesting than the people, as the birds shown in many classes were better than have as yet been entered this year and as to the variety anyone who is not thoroughly familiar with the different breeds would almost believe that someone had been using a paint brush full of handsome colors. Surely, no breeder has more varieties to choose from than the poultry breeder, judging by the number shown at this place.

Strictly speaking the poultryman is in his element at the poultry show, and the air is so full of fowls and fowl talk that one is surely a chronic pessimist who does not become a booster for the hen. Everyone is willing to tell you the right laying type, the ideal show bird and last but of more importance how to feed to get the egg. Speaking of feeds, the University of California also took advantage of the show to explain where the big losses were in feeding and housing, and how best to overcome them. The poultry supply houses were on hand to explain the merits of their feeds and poultry equipment and considering everything, one was able to get a lot of valuable information concerning the raising of poultry.

The number of entries was more than was shown last year there being over 1600 head of poultry and 1500 head of pigeons.

The largest class was the Barred Plymouth Rocks, followed closely by the White Rocks. The Anconas were exceptionally strong in numbers as well as the Cornish Indian Game. The Orpingtons were not so large in numbers, but were elegant in quality. Both the Bantam breeders and pheasant breeders had a fine display, the bantam classes being extra large this year. While the White Leg-

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S. C. WHITE LEGHORNS—Eggs and chicks. Heavy layers. Write for catalogue. W. G. Suits, 378 Bandini Ave., Riverside, Cal.

BABY CHICKS—Write for book, "The Day Old Chick Business." It's free. White Leghorn and Black Minorca chicks my specialty. Lasher's Hatchery, 400 Kentucky St., Petaluma, Cal.

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FOR SALE—Barred Rock cockerels, $2.00 each and up. Send for folder. G. L. Hawley, Madera, Cal.

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BRONZE Turkeys and Eggs. Ed Hart, Clement, Cal. Large size, good plumage, early maturity.

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require a good tonic and conditioner to keep them in health and get them laying again quickly.

COULSON'S No. 3 CONDITION POWDER will do it.

Write for particulars and special delivered price.

COULSON CO.,
Petaluma, Cal.

TWENTY THOUSAND DRESSED TURKEYS

wanted for our Christmas and New Year trade. Commence now and ship us what fancy dressed turkeys you have on hand. We also handle dressed calves and dressed hogs. When shipping dressed hogs leave the head on, the heart, kindeys, liver and bladder in the hog, undetached. Write us immediately and let us know how many head we can expect from now on.

Mark and consign all shipments of produce to the old and reliable firm of

W. C. PRICE & COMPANY, 211-213 Clay St., San Francisco, California.
Established 1876.

HICKS JUBILEE HATCHERY

Now booking Orders.

Our chicks have no superiors and few equals. Send for list, it's free.

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R. R. 2, Box 22 PETALUMA, CAL.

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The Most Economical Pumping System

MANY years of successful use has demonstrated that the Layne & Bowler System is the most economical pumping system. Low cost to install; low operating cost; increased water supply; sturdy, durable construction—built to stand constant wear—these are the vital points that distinguish the Layne & Bowler System, and make it the cheapest. Layne & Bowler pumps are simple in construction, requiring little or no attention after once installed. They are constructed to eliminate the old style well pit, and all adjusting can be done on top of the ground. The Layne & Bowler System insures you a dependable water supply at less cost. Write our irrigation and water experts. They will assist you to solve your water developing problems. This service is free and places you under no obligation.

Write today for Catalog No. 25, which tells all about the development of the Layne & Bowler System and the story of its many successful users. "Let the World's Largest Water Developers solve your Pumping Problems."

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WFC CHICK SAVER MADE BY WFC

Complete Line of Poultry Feeds

Send for list and prices or see your dealer.

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North Point & Taylor St.
San Francisco

Does It Not Seem Reasonable To Assume That a Company

which has been manufacturing one line of goods for over thirty years must be in a better position to furnish superior goods than one which has been in business a few months or years? We have proved this by the quality of our new water balanced pump. It is absolutely balanced against end thrust and vibration, and will run without set collars or other mechanical thrust bearing. It can be seen in operation at our places of business, at Krogh Manufacturing Company, 147 to 159 Beale Street, San Francisco, and at 206 North Los Angeles Street, Los Angeles, California.

New Type Horizontal

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Our New Bulletin, R 10, tells about them.

KROGH MANUFACTURING COMPANY

Our Branch House, 206 N. Los Angeles St., Los Angeles, carries a complete stock.

149-157 BEALE ST., SAN FRANCISCO.

horn division was not extra large, it contained some fine specimens.

There were so many other breeds exhibited that have not as yet become generally maintained that space will not permit their mention here, suffice to say that authorities were enthusiastic about the quality of all birds shown.

A few of the principal winners of prizes were O. B. Morris, of Lodi in the Leghorns; W. H. Ingram of Fruitvale, in Orpingtons; A. A. Bramford of Gardena, in White Rocks; and the Twin Oaks Farm of Livermore, which took a large number of prizes in a number of breeds entered.

W. M. Coates of Vancouver, British Columbia A. C. Goodacre of Compton, and N. C. Luce of Los Angeles did the judging and had their work well done by Wednesday evening.

If all poultry shows this season are as entertaining and educating as this one it would pay every farmer to take a day off and attend the one nearest to his home as he would very likely go away with a great deal more respect for the good bird than he had when he entered.

RABBIT RAISING.

To the Editor: What in your estimation is the outlook for raising rabbits or Belgian hares on a large scale for the San Francisco market? Would it likely prove profitable as a side line? What breed is considered the best for market purposes?—Old subscriber, Alviso.

Dealers state that the present prices of 10 to 12 cents a pound for young rabbits should continue and that they should not drop below 10 cents any time of the year, except rarely, and for very short periods. If so, the experienced rabbit breeder should feel pleased with the prosepects. If one should go into it at all he ought to start on a small scale and grow to the large scale as experience increases. We believe that crossbred Flemish Giants and Belgian hares are frequently considered the most profitable market rabbit, that is, Flemish Giant sire and Belgian dam being used to raise market animals. At least, only rather large rabbits should be shipped, 4 to 4½ pounds in weight. There is a Farmers' Bulletin on Rabbits sent free on request to the Bureau of Documents, U. S. Department of Agriculture, Washington, which you might get for more detailed information.

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Kills Squirrels

KILMOL costs less than ONE cent in money minute in time FOR EACH SQUIRREL BURROW TREATED

The quickest, most efficient, most economical method known KILMOL used with U. S. Squirrel Destructor—(See Bulletin of State Board of Health)

gives 98 to 100 per cent efficiency, at a cost of from 18 to 28 cents per acre. Only one application is necessary.

The waste-ball method gives only 90 to 95 per cent efficiency and costs 60 to 75 cents per acre. Two or more applications are necessary.

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Waste-ball method must be used in wet weather.
Poisoned grain must be used in dry weather.

This Squirrel Destructor is an apparatus by which 13.3 cubic feet of Kilmol Gas is forced into the squirrel burrow. The gas is heavier than air, completely fills the burrow, and remains there several hours, which means death to the squirrel. Failure is impossible.

United States Public Health Service Model

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1 gallon tins	$ 1.50	Read Our
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Strychnine Sulphate 65c an ounce. **Poisoned Barley (Gov't formula) $7.50 for 100-lb. drum**

Send for complete information now—or if you wish to investigate the possibilities of this method immediately, send us $17.50 and we will send you the squirrel Destructor, 3½ feet of one-inch hose, carrying straps and a five-gallon can of Kilmol. With an average infestation, this will treat over 60 acres, and the cost thereafter for KILMOL will be but $6.00 for each additional 60 acres.

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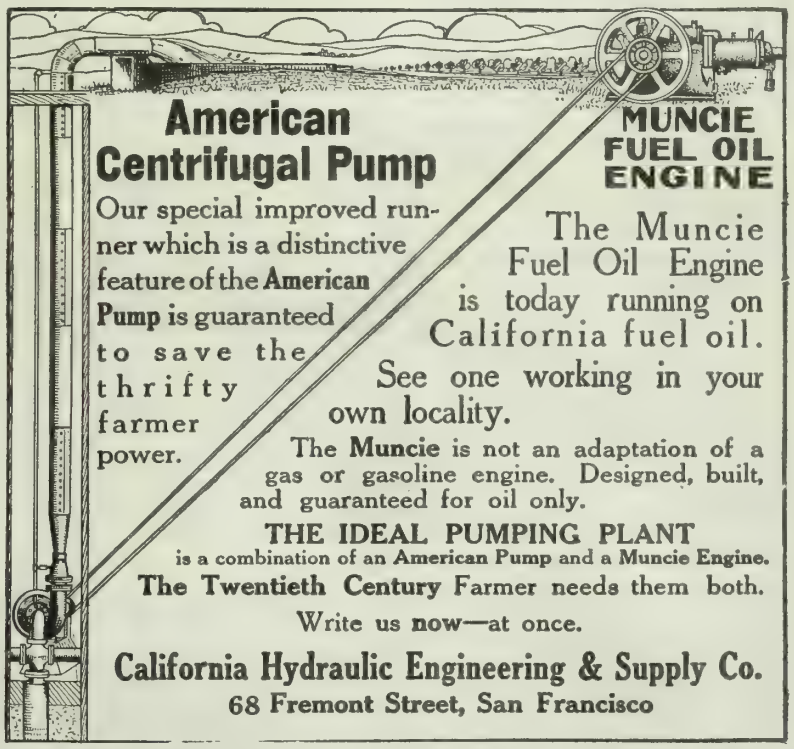

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is a combination of an **American Pump** and a **Muncie Engine.**
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The Best and Most Practical Plow Made

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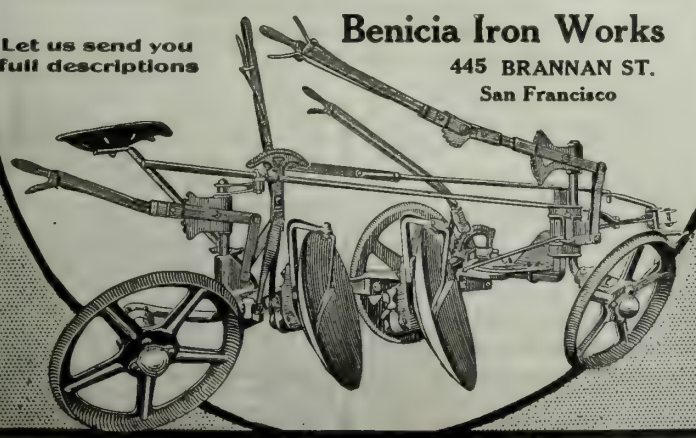

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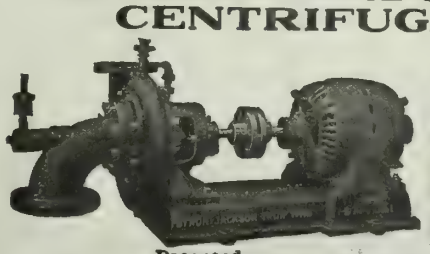

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Forkner Orchard Cultivator

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Cultivating the entire surface beneath low branches without disturbing boughs or fruit. Write for catalogue and free book "Modern Orchard Tillage."

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The Home Circle.

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Santa Claus and Little Billee.

By John Kendricks Bangs,
Author of "The Idiot," "A Houseboat on the Styx," etc.

He was only a little bit of a chap, and so, when for the first time in his life he came into close contact with the endless current of human things, it was as hard for him to "stay put" as for some wayward little atom of flotsam and jetsam to keep from tossing about in the surging tides of the sea.

His mother had left him there in the big toy shop, with instructions not to move until she came back, while she went off to do some mysterious errand. She thought, no doubt, that with so many beautiful things on every side to delight his eye and hold his attention, strict obedience to her command would not be hard. But, alas, the good lady reckoned not upon the magnetic power of attraction of all those lovely objects in detail. She saw them only as a mass of wonders which, in all probability, would so dazzle his vision as to leave him incapable of movement; but Little Billee was not so indifferent as all that.

When a phonograph at the other end of the shop began to rattle off melodious tunes and funny jokes, in spite of the instructions he had received, off he pattered as fast as his little legs would carry him to investigate. After that, forgetful of everything else, finding himself caught in the constantly moving stream of Christmas shoppers, he was borne along in the resistless current until he found himself at last out upon the street—alone, free and independent.

It was great fun at first. By and by, however, the afternoon waned; the sun, as if anxious to hurry along the dawn of Christmas day, sank early to bed; and the electric lights along the darkening highway began to pop out here and there like so many merry stars come down to earth to celebrate the gladdest time of all the year. Little Billee began to grow tired; and then he thought of his mamma and tried to find the shop where he had promised to remain quiet until her return. Up and down the street he wandered until his little legs grew weary; but there was no sign of the shop, nor of the beloved face he was seeking.

Once again, and yet once again after that, did the little fellow traverse that crowded highway, his tears getting harder and harder to keep back, and then—joy of joys—whom should be see walking slowly along the sidewalk but Santa Claus himself! The saint was strangely decorated with two queer looking boards, with big red letters on them, hung over his back and chest; but there was still that same kindly gray-bearded face, the red cloak with the fur trimmings, and the same dear old cap that the children's friend had always worn in the pictures of him that Little Billee had seen.

With a glad cry of happiness, Little Billee ran to meet the old fellow, and put his hand gently into that of the saint. He thought it very strange that Santa Claus' hand should be so red and cold and rough, and so chapped; but he was not in any mood to be critical. He had been face to face with a very disagreeable situation. Then, when things had seemed blackest to him, everything had come right again; and he was too glad to take more than passing notice of anything strange and odd.

Santa Claus, of course, would recognize him at once, and would know just how to take him back to his mamma at home—wherever that might be. Little Billee had never thought to inquire just where home was. All he knew was that it was a big gray stone house on a long street somewhere, with a tall iron railing in front of it, not far from the park.

"Howdidoo, Mr. Santa Claus?" said Little Billee, as the other's hand unconsciously tightened over his own.

"Why, howdidoo, kiddie?" replied the old fellow, glancing down at his newfound friend, with surprise gleaming from his deep-set eyes. "Where did you drop from?"

"Oh, I'm out," said Little Billee, bravely. "My mamma left me a little while ago while she went off about something, and I guess I got losted."

"Very likely," returned the old saint with a smile. "Little two-by-four fellows are apt to get losted when they start on their own hook, especially days like these, with such crowds hustlin' around."

"But it's all right now," suggested Little Billee hopefully. "I'm found again, ain't I?"

"Oh, yes, indeedy, you're found all right, kiddie," Santa Claus agreed.

"And pretty soon you'll take me home again, won't you?" said the child.

"Surest thing you know!" answered Santa Claus, looking down upon the bright but tired little face with a comforting smile. "What might your address be?"

"My what?" asked Little Billee.

"Your address," repeated Santa Claus. "Where do you live?"

The answer was a ringing peal of childish laughter.

"As if you didn't know that!" cried Little Billee, giggling.

"Ha, ha!" laughed Santa Claus. "Can't fool you, can I? It would be funny if, after keeping an eye on you all these years since you was a baby, I didn't know where you lived, eh?"

"Awful funny," agreed Little Billee. "But tell me, Mr. Santa Claus, what sort of a boy do you think I have been?" he added, with a shade of anxiety in his voice.

"Pretty good—pretty good," Santa Claus answered, turning in his steps and walking back again along the path he had just traveled—which Little Billee thought was rather a strange thing to do. "You've got more white marks than black ones—a good many times more—a hundred and fifty times as many, kiddie. Fact is, you're all right—'way up among the good boys; though once or twice last summer, you know——"

"Yes, I know," said Little Billee, meekly, "but I didn't mean to be naughty."

"That's just what I said to the bookkeeper," said Santa Claus, "and so we gave you a gray mark—half white and half black—that doesn't count either way, for or against you."

"Thank you, sir," said Little Billee, much comforted.

"Don't mention it; you are very welcome, kiddie," said Santa Claus, giving the youngster's hand a gentle squeeze.

"Why do you call me 'kiddie' when you know my name is Little Billee?" asked the boy.

"Oh, that's what I call all good boys," explained Santa Claus. "You see, we divide them up into two kinds—the good boys and the naughty boys—and the good boys we call kiddies, and the naughty boys we call caddies, and there you are."

Just then Little Billee noticed for the first time the square boards that Santa Claus was wearing.

"What are you wearing those boards for, Mr. Santa Claus?" he asked.

If the lad had looked closely enough, he would have seen a very unhappy look come into the old man's face; but there was nothing of it in his answer.

"Oh, those are my new-fangled back-and-chest protectors, my lad," he replied. "Sometimes we have bitter winds blowing at Christmas, and I have to be ready for them. It wouldn't do for Santa Claus to come down with the sneezes at Christmas-time, you know—no, siree. This board in front keeps the wind off my chest, and the one behind keeps me from getting rheumatism in my back. They are a great protection against the weather."

"I'll have to tell my papa about them," said Little Billee, much impressed by the simplicity of this arrangement. "We have a glass board on the front of our ortymobile to keep the wind off Henry—he's our shuffler—but papa wears a fur coat, and sometimes he says the wind goes right through that. He'll be glad to know about these boards."

"I shouldn't wonder," smiled Santa Claus. "They aren't very becoming, but they are mighty useful. You might save up your pennies and give your papa a pair like 'em for his next Christmas."

Santa Claus laughed as he spoke; but there was a catch in his voice which Little Billee was too young to notice.

"You've got letters printed there," said the boy, peering around in front of his companion. "What do they spell? You know, I haven't learned to read yet."

"And why should you know how to read at your age?" said Santa Claus. "You're not more than——"

"Five last month," said Little Billee, proudly. It was such a great age!

"My, as old as that? cried Santa Claus. "Well, you are growing fast! Why, it don't seem more than yesterday that you was a pink-cheeked baby, and here you are big enough to be out alone! That's more than my little boy is able to do."

Santa Claus shivered slightly, and Little Billee was surprised to see a tear glistening in his eye.

"Why, have you got a little boy?" he asked.

"Yes, Little Billee," said the saint. "A poor, white-faced, little chap about a year older than you, who—well, never mind,

Madam—

When the problem of "what shall we have for dinner" again presents itself—just remember what a zest

Ghirardelli's Ground Chocolate

adds to any meal. It is ready at a moment's notice, it is liked by every member of the family, it is easily digested—it is, on the whole, a perfect home beverage. Yet it is as inexpensive as anything of its kind you can buy. Thirty cups to every pound.

You're SURE of the quality if you insist upon getting GHIRARDELLI'S

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A sample can, mailed free, will prove why it is so popular.

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Teachers Receive From $70 to $150 Per Month and Have a Pleasant Occupation - Free Catalog
PREPARE AT
WESTERN NORMAL
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33⅓ PER CENT GROCERIES 33⅓ PER CENT

Less than the prices you are now paying.

If you want to set a Better Table—Want to increase the variety—Improve the Quality of your food and save at least, 33⅓%
SEND FOR OUR CATALOG.
We are selling pure Cane Granulated Sugar at $4.75 per 100 lbs. 25 lbs. for $1 when ordered with other Groceries.
No matter how small your Grocery bills even though you do not spend more than $10 or $15 a month—you cannot afford to be without our Grocery Catalog. It will keep you posted on what you should pay for Groceries and other necessities.
We are equipped to handle Hotels, Summer Resorts, Restaurants, Boarding Houses, Etc.
SEND TODAY—NOW, FOR GROCERY CATALOG.
DIRECT SUPPLY COMPANY, INC.
341 Commercial St. San Francisco, Calif.

kiddie—he's a kiddie, too—let's talk about something else, or I'll have icicles in my eyes."

"You didn't tell me what those letters on the boards spell," said Little Billee.

"'Merry Christmas to Everybody!'" said Santa Claus. "I have the words printed there so that everybody can see them; and if I miss wishing anybody a merry Christmas, he'll know I meant it just the same."

"You're awful kind, aren't you?" said Little Billee, squeezing his friend's hand affectionately. "It must make you very happy to be able to be so kind to everybody!"

(To Be Continued.)

Better Conditions for Farm Women.

A significant event which characterized the Tulsa Dry Farming Congress last month was the assembling of the third annual meeting of the International Congress of Farm Women. It was one of the strongest and best organized women's gatherings the country has ever seen. It was in session five days and many women of national note were present and addressed the delegates on matters of especial interest to the housewives on the farm. The keynote of this event was contained in an address by Mrs. Belle v'D Harbert, Manzanola, Colorado, who presented the life's duties of the home-building mother in a brilliant speech characterized by one of her auditors as "almost pathetic in its challenge and almost challenging in its pathos." She said:

"The International Congress of Farm Women, organized at Colorado Springs in October, 1911, is a woman's movement toward the goal of social justice.

"The world has absolutely failed to appreciate the economic value of the farmer's wife, and she has now stepped upon the stage of social progress and offered to help in the solution of the world's great problems. Her experience as the keeper of the rural home from which so many great men of all nations have come, her knowledge of the burdens and care which have driven so many thousands of her sisters from the farm to take refuge in the cities, and her unselfish desire to be of real service to humanity, have prompted this organization. Results most important to the future of all nations are sure to follow.

"It is the beginning of a new era in country life. There is no doubt as to the responsibility for the wholesale movement toward the city during the past decade. Women become tired of the drudgery caused by lack of convenience in the rural homes, but which are furnished in the cities. In the city she has water in the house, fuel for cooking, lights, and often heat. The sewerage problem is solved and there are a thousand other conveniences which she could not have under present existing circumstances in the rural communities. She becomes tired of the monotony and isolation she has to endure and naturally turns to the city as a means of relief.

"Farm women have hitherto labored and died as individuals. They have never been recognized as a class or factor in the world's work. Other great industries have always had ample consideration at the hands of the government, the State and by the student of social problems; so have the wage earners, but she who has given to the world it's recruits of brain and brawn has had no fitting recognition.

"Much has been said of late about the popularity of the 'Back to the Farm' movement on account of modern methods of soil tillage, up-to-date machinery and a better knowledge of farm management; but practically nothing has been said in regard to power for household use, best methods of securing a plentiful water supply for the house, the most sanitary methods of disposing of sewage, and up-to-date methods of furnishing light and heat for the farm home.

"These household problems must be solved before the 'Back to the Farm' movement will ever be popular. Women are not going back to the farm to milk cows and make butter without the help of a cream separator and other modern conveniences with power to run them. Never again will she be willing to carry water for household use when modern inventions are cheaper than human strength; never again will she be content to spin and knit and weave like her grandmother did, or be a slave to the broom and dust cloth when a vacuum cleaner saves its price in doctor's bills every year of its installment."

"Something I can do for you, sir?" said the floor-walker to a man anxiously walking up and down every aisle in the big store.

"Well, yes," answered the man. "I seem to have lost my wife."

"Third floor, third aisle," said the floor-walker. "You'll find a full line of mourning goods there."—Exchange.

A traveler who had believed himself to be sole survivor of a shipwreck upon a cannibal isle hid for three days, in terror of his life. Driven out by hunger, he discovered a thin wisp of smoke rising from a clump of bushes inland, and crawled carefully to study the type of savages about it. Just as he reached the clump he heard a voice say: "Why in hell did you play that card?" He dropped on his knees and, devoutly raising his hands, cried:

"Thank God, they are Christians!"

UNCLE SAM DELIVERS OUR TEAS AT YOUR DOOR

WE PAY THE POSTAGE

"SA-SA-MA"	A high-grade uncolored Green Japan Tea	60c per lb.
"LONDON BLEND"	A good English Breakfast Black Tea.	50c " "
"DALMOY BLEND"	The choicest Black Tea the world produces	75c " "

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THE ANGLO-CEYLON COMPANY'S TEAS are carefully selected and blended by experts. are guaranteed to be absolutely pure. are always fresh and packed only in air-tight tins. offer the very best value obtainable at respective prices.

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This Coupon Entitles You to A Free Sample of

(Mention kind wanted)

NAME AND ADDRESS

For Real Solid Comfort

On chilly cold days or for warming "that cold corner" there is no better heating device than the

PERFECTION SMOKELESS OIL HEATER

Wherever there are children or old people it is particularly appreciated.

Can't smoke. Doesn't smell. Easy to light and take care of. Easy to carry from room to room. Economical, inexpensive. Will last a lifetime.

For Best Results We Recommend Pearl Oil

Ask to See It At Your Dealers

Standard Oil Company (CALIFORNIA) SAN FRANCISCO

Once upon a time a farmer, seeing an ad for a cheap telephone, ordered one.

Did he save money?

In due time the phone arrived and was unpacked. It looked pretty good, the farmer thought. He installed the phone at once.

Did it work O. K.?

Yes it did—at first; but as the days and weeks and months wore by this farmer began to realize that his telephone was not so cheap after all—unreliable service and repairs, due to cheap material and poor construction, made that telephone in reality a high priced one.

This is the experience of many, many buyers.

If you don't know, find out all about Kellogg—from users—our customers are our best advertisement.

Write today for books on real telephones and line construction.

Mention this paper.

Kellogg Switchboard & Supply Co.

San Francisco Office 86 3rd St.

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NO CRACKS

Are ever seen in walls and ceilings made of Beaver Board. Durable, beautiful, sanitary. Forty-one advantages. Call and see how it looks.

THE LILLEY & THRUSTON CO., Rialto Building, San Francisco, Cal.

Buy Land At Fairmead

Where California dairymen and fruitmen are buying. Where the land stands the test of dry and wet seasons. 19,000 acres now being subdivided into 10, 20, 40-acre tracts. Unlimited water—rich, sandy loam soil.

Good neighbors—healthful climate—splendid markets.

Low prices—easy terms.

Send today for free illustrated booklet.

CO-OPERATIVE LAND AND TRUST CO., Owners, 593 Market St., San Francisco.

THE MARKETS.

San Francisco, Dec. 3, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The demand in the local market is little more active than it has been, and there is quite a firm feeling in regard to prices, club being quoted a little higher.

California Club, ctl	$1.45	@1.50
Forty-fold	1.50	@1.52½
Northern Club	1.45	@1.50
Northern Bluestem	1.67½	@1.70
Northern Red	1.55	@1.70

BARLEY.

The spot market stands about as before. There is very little trading at the moment, but prices are very firmly held, the recent downward movement being apparently at an end. Business in futures is also light, but the market is firm all around.

Brewing and Shipping	$1.37½	@1.42½
Choice Feed, per ctl	1.27½	@1.32½
Common Feed	1.25	@1.27½

OATS.

Feed grades find no demand worth mentioning at present, but there is still a very fair call for seed, and values on such stock are well maintained.

Red Feed	$1.65	@1.85
Seed	2.25	@2.30
Gray	Nominal	
White	1.50	@1.55
Black Seed	2.50	@3.00

CORN.

Prices are almost entirely nominal, as there is hardly any corn offered on the spot. For stock to arrive, however, values are held about up to the old figures, though somewhat lower prices are expected.

California Yellow	Nominal	
Eastern Yellow	$1.85	@1.90
Eastern White	Nominal	
Egyptian	1.57½	@1.62½
Kaffir	Nominal	

RYE.

Values continue at the old level. There is still some demand for seed, but the movement has not been heavy.

Rye, per ctl	$1.45	@1.50
Seed	1.65	@1.70

BEANS.

Trading has quieted down considerably of late, and the dullness usually experienced between Thanksgiving and Christmas now prevails. Fall shipments are arriving in large quantity at the principal distributing points, giving ample supplies for the near future, and the attention of the trade is turned more to holiday goods. The movement, however, has been very satisfactory, and prices are well maintained. Bayos and pinks are still stronger than anything else, and prices have again advanced this week. A very heavy consuming demand for limas is reported throughout the country, but locally this line seems to be about the easiest on the list.

(On wharf.)

Bayos, per ctl	$4.25	@4.50
Blackeyes	4.00	@4.25
Cranberry Beans	3.75	@4.00
Horse Beans	1.90	@2.10
Small Whites	4.75	@5.00
Large Whites	3.10	@3.25
Limas	5.00	@5.10
Pea	Nominal	
Pink	3.00	@3.25
Red Kidneys	4.25	@4.50
Mexican Red	3.75	@4.00

SEEDS.

No change is noted in prices, and while there is a fair demand in some particular lines, business on the whole is quiet.

Alfalfa	12½	@15 c
Broomcorn seed, per ton	Nominal	
Brown Mustard, per lb		3¾c
Canary	7	@ 7½c
Hemp	2½	@ 3 c
Millet	2½	@ 2¾c
Timothy	7½	@ 8 c
Yellow Mustard	Nominal	

FLOUR.

Values stand as for some time past. The local market requirements show little fluctuation, and considerable stock for this market is coming in from the north.

Cal. Family Extras	$5.60	@6.00
Bakers' Extras	4.65	@5.20
Superfine	3.90	@4.10
Oregon and Washington		4.90

Hay and Feedstuffs.

HAY.

Nothing of special interest has yet developed in the hay market. Arrivals are running along about the same as for some time, and are quite ample for current demands, as most of the large consuming concerns are still supplied from purchases made early in the season, and nobody is at present buying more than immediately needed. There is still a good country demand, mostly for alfalfa, but this is expected to diminish, as the green feed is coming up in good shape. Prices show no quotable change.

No. 1 Wheat, or Wheat and Oats	$16.00@17.00
do No. 2	14.00@16.00
Lower grades	13.00@14.00
Tame Oats	14.50@16.50
Wild Oats	12.00@14.50
Alfalfa	10.00@13.00
Stock Hay	9.00@10.00
Straw, per bale	60@ 80c

FEEDSTUFFS.

Bran is lower, with continued large arrivals from the north. Prices in other lines are unchanged. Some descriptions are rather scarce, but the demand just now is too light to cause any firmness.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	23.00@24.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	30.00@31.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	28.00@29.00
Rolled Oats	33.00@34.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Business in general continues quiet, and the market is depending more on the south for supplies in several lines. Offerings of local tomatoes have dropped off considerably this week, and prices are considerably higher, though there is not much demand. Good beans and peas are quite scarce, and sell in a limited way at higher prices. Lettuce also has been marked up. One of the interesting features of the week has been the sudden accumulation of celery, which for several days was down to $1 per crate, but is now somewhat firmer with lighter receipts.

Cabbage, per ctl		1.50
Cauliflower, dozen	40@	60c
Cucumbers, Southern, box	50@	75c
Green Peppers, lb	2@	2½c
Carrots, per sack	50@	65c
Green Peas, Southern, lb	8@	12½c
String Beans, lb	2@	7c
Summer Squash, lug box	75c@	1.00
Okra, box		1.00
Tomatoes, box	50c@	1.00
Eggplant, box	40c@	1.00
Lima Beans, lb	2@	5c
Sprouts, lb	4@	6c
Celery, large, crate	1.25@	1.75
Rhubarb, box	75c@	1.25
Lettuce, crate	90c@	1.25
Mushrooms, lb	5@	10c

POTATOES, ONIONS, ETC.

Potatoes have been coming in more freely for the last week, and prices accordingly show a slight reduction, though fancy lots will still bring the top figures. Onions are firm, with supplies moderate and closely held, and Oregon stock is now selling at quite an advance over the river onions.

Potatoes—		
Salinas, ctl	$ 1.75@	2.00
New River Whites	75c@	1.10
Sweet Potatoes, per ctl	1.00@	1.25
Oregon Burbanks	1.00@	1.40
Onions: Yellow River, ctl	$ 1.75@	2.00
Oregon	2.25@	2.50
Garlic, per lb	7@	8c

Dairy Produce.

POULTRY.

Turkeys were fairly well cleaned up in the Thanksgiving market, but the local trade is taking little interest in poultry this week. There have been fairly liberal shipments from both Eastern and nearby points, and with little demand values are inclined to weakness.

Large Broilers, per lb	20	@22 c
Small Broilers, per lb	28	@29 c
Fryers, per lb	18	@19 c
Hens, extra, per lb	17	@18 c
Hens, large, per lb	17	@18 c
Small Hens, per lb	14	@15 c
Old Roosters, per lb		12 c
Young Roosters, per lb	18	@20 c
Squabs, per doz	$ 1.50	@ 2.00
Geese, per pair	2.00	@ 3.00
Ducks, doz	4.50	@ 8.00
Turkeys, live, per lb	21	@22 c
do dressed	25	@27 c

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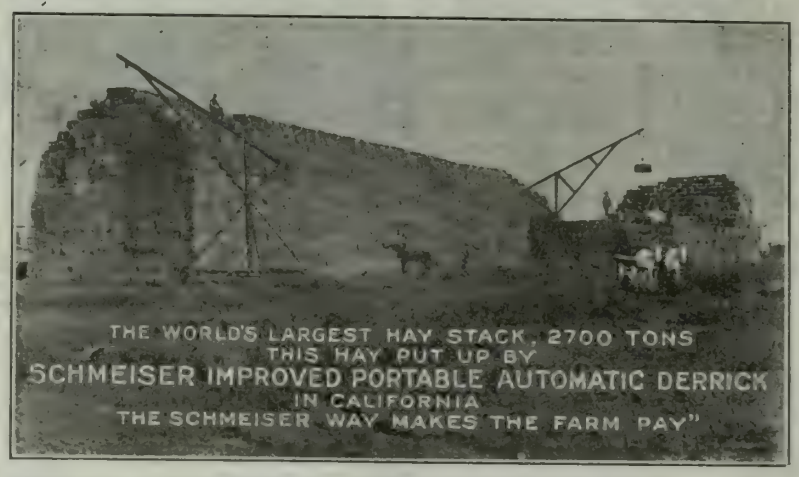

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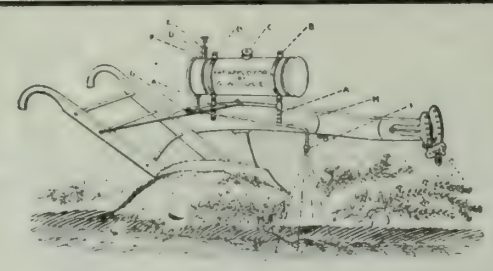

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BUTTER.

Arrivals have been quite large for the last few days, and prices have dropped off somewhat from the high figures of last week, with little prospect of any great firmness in the immediate future.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	—	36½	36½	36½	35	33
Firsts	—	31½	31½	32	32	32

EGGS.

There has been nothing in the market to sustain the high prices which were quoted recently, and a remarkable drop has taken place in the last fortnight. Production has been somewhat larger for the last week, and arrivals have increased materially.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras ...	—	54½	54½	52	47	47
Selected Pullets...	—	49	49½	49	43	42½

CHEESE.

Fancy flats have lost a little of their recent firmness, with somewhat larger supplies, and Monterey cheese is also quoted a little lower, though the latter line is still scarce and comparatively high.

Fancy California Flats, per lb	17½c
New Young Americas, fancy	17 c
Monterey or Jack Cheese	20@22 c

Deciduous Fruit.

Business in the deciduous fruit market is rapidly narrowing down to the usual winter lines. Huckleberries have been about cleaned up, and most lines of grapes are running short. The latter now find little demand, but attractive lots bring somewhat better figures than before. The stock of cranberries was greatly reduced by last week's demand, and prices have again advanced for Eastern stock. Strawberries and raspberries are both higher, as there is little coming in, although there is no demand worth mentioning now. Apples find only a fair demand in the local trade, but the market is stiffening up perceptibly, as stocks in the north are getting pretty well cleaned up, and holders in California have fair prospects of cleaning up at an advance. So far, however, values show no quotable change.

Strawberries, chest	$ 8.00@10.00
Raspberries, chest	8.00@11.00
Cranberries: Coos Bay, box	2.25@ 2.50
Cape Cod, bbl	13.00@13.50
Apples: Baldwins	1.15@ 1.50
Spitzenbergs	1.10@ 1.60
Greenings	1.00@ 1.35
Bellefleur	1.25@ 1.75
Newtown Pippins	1.25@ 1.75
Pears: Winter Nelis	1.00@ 2.00
Grapes: Malaga, crate	75c@ 1.00
Muscat	75c@ 1.00
Black, lugs	65c@ 1.25
Tokay, lugs	65c@ 1.25
Cornichon, crate	75c@ 1.00
Quinces, box	50c@ 1.25
Pomegranates, box	50@ 60c
Persimmons, box	75c@ 1.00

Dried Fruits.

The dried fruit market at this end has fallen into the usual dull condition before Christmas, and there is little new business in any line, either in the country or for Eastern shipment. Packers are still working to some extent on deliveries, but most of the fall orders have by this time been filled, and the larger distributing markets have ample stock to last over the holidays. There is apparently considerable activity in the jobbing trade, however, and it is expected that the year will close with very light stocks in dealers' hands. The market continues fairly firm all around. The New York Journal of Commerce says:

"Comparatively little interest in forward shipment California prunes is reported at present, but there is no pressure to sell and the market remains steady on the basis of previous f.o.b. quotations, with the trend of prices upward on the larger sizes. Spot jobbing trade is moderately active. California raisins are reported to be in a firm position, as outside packers have little stock and are not, therefore, in a position to affect the market as made by the quotations of the Associated Company.

"In apricots a very firm feeling prevails and higher prices are looked for as a result of the close clean-up of Coast stocks and limited supplies in the hands of distributers in Eastern markets. Peaches are inactive and steady, with no pressure to sell from any quarter."

Evap. Apples, 1913	6½@ 8 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4½c
Black	2½@ 3½c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 @ 4½c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4¼c

Citrus Fruits

Oranges from Tulare county are going East in large amounts these days. Prices are very fair, though considerable competition is felt from Florida and Porto Rico stock. Butte county shipping started this week and the fruit from that district will mostly all be marketed in the coming 30 days.

The first sale of the season by the California Fruit Auction Co. was held at Los Angeles last Monday, when fourteen lots of oranges were sold at fair prices, ranging from $1.60 to $2.10 per box f.o.b. California. Regular sales will be held till January 1st, on each Monday, Wednesday and Friday. On the Eastern auction markets last Monday, oranges averaged from $2.55 down to $1.50 per box. Lemons sold the same day in the East at $2.80 per box. Florida oranges sold for 50c. up to $3.45.

New navel oranges continue to come into the San Francisco market freely, and the demand so far has been of rather limited proportions. Prices have accordingly taken another drop, $3 being the best price for most lines, though a few extra fancy lots have been sold at a premium. Tangerines are also beginning to appear, but the movement has so far been light. Limes are fairly plentiful and lower.

Oranges (per box):	
New Navels	$ 2.00@ 3.00
Tangerines	2.25@ 2.75
Grapefruit, seedless	3.00@ 4.00
Lemons	2.50@ 6.50
Limes	3.50@ 4.50

Nuts, Honey, Hops, Etc.

NUTS.

The nut business is now almost entirely a jobbing proposition, as practically all the stock in growers' hands has been cleaned up, and most of the holiday buying has been done. Quotations are accordingly nominal.

Almonds, new crop:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

Prices on all the better grades of both comb and extracted are very firmly held, as there is little offered from outside sources, and the local supply is getting into very narrow compass. There is no very large demand, but enough to give considerable strength to the market.

Comb, white	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Surplus supplies in this market have been closely cleaned up, and new offerings are light at present. Values are firmly held, but little more than nominal at the moment.

Light	30 @32 c
Dark	28 @30 c

HOPS.

Prices continue within the old range, but there is no business of any consequence under way. Notwithstanding reports of a general shortage, buyers show no great interest in the limited amount still unsold in the State. Some offers have been made for next year's hops, 17c. being reported in Sonoma county, but growers are not anxious to make contracts.

1913 crop	20@25c

Live Stock.

Hogs have been coming in rather liberally for the last few weeks, and prices are quoted a little lower. Otherwise values stand as before.

Steers: No. 1	7¼@ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼@ 6½c
No. 2	5¾@ 6 c
Bulls and Stags	2½@ 5 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	7¾@ 8 c
150 to 250 lbs	8¼@ 8½c
100 to 150 lbs	8 @ 8¼c
Prime Wethers	4¼@ 4½c
Ewes	3½@ 3¾c
Lambs: Suckling	5¾@ 6 c

DRESSED MEATS.

Steers	12 @12½c
Heifers	11 @11½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	11½@12 c
Dressed Hogs	13½@14 c

WOOL.

The local wool market remains featureless, as buyers are taking no interest and values are entirely nominal.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

Prices on country hides continue at the old level, the continued firmness being due almost entirely to the exceptionally light offerings from primary sources. Tanners are buying rather lightly.

HORSES.

Shipments of good-sized drafters, wagon horses, and all-purpose stock to this market have been fairly large for the last fortnight, and the sales have been well attended, business being livelier than for some time past. While prices show a very wide range, according to class, condition, etc., as well as weight, broke horses that are true to type and in good condition have brought satisfactory prices.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	150@200
Wagon Horses, 1250 to 1350	100@150
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	75@100

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

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PUBLISHER'S DEPARTMENT.

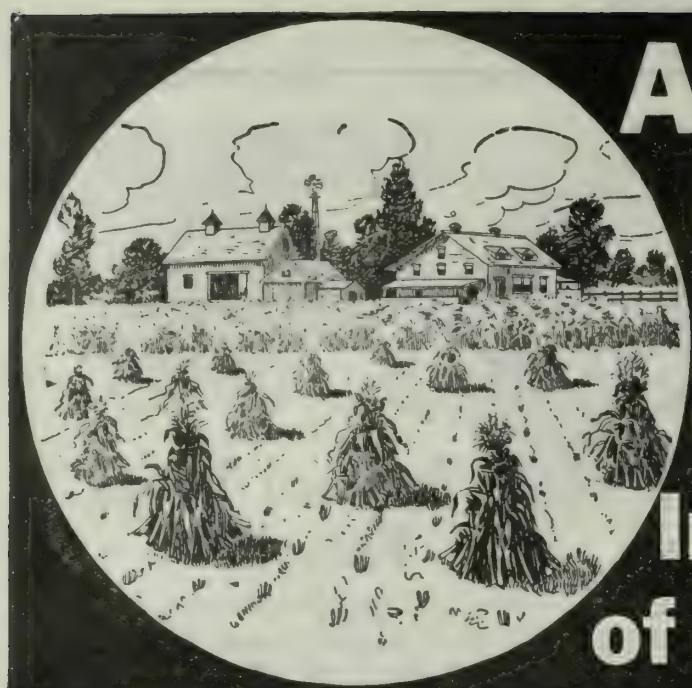
In another department of the PACIFIC RURAL PRESS is printed the announcement of the new book we will have ready for distribution by the 15th of December. This book will be of especial value as a reference volume to every farmer in the State. The price of $1.50 for this 256-page, cloth-bound book is very reasonable, and we trust the orders will come in large numbers. We have a special offer to make subscribers in connection with this book and wish you would send us a postal card asking for it.

The Pomona Pump Mfg. Co. has just issued a very handsome catalogue which contains many tables of value to irrigationists, besides telling of the good points in connection with their deep well pumps. The company will be glad to send you a copy if you will write them asking for Catalogue No. 54.

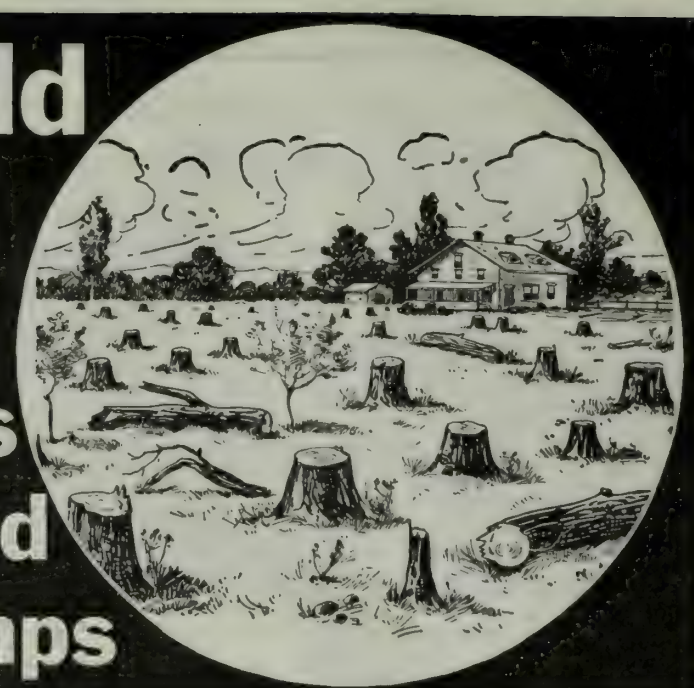
ANOTHER NEW BOOK.

The Orange Judd Co. has just issued a handsome book, copiously illustrated, of over 500 pages, and well bound in cloth. The title of the book is "Agriculture—Soils and Crops," and is the joint production of Dean Hunt of the University of California and Charles William Burkett, editor of the American Agriculturist. The book will have added interest to California farmers from the fact that Dean Hunt is a local man. Those interested in agriculture should secure a copy. Price $1.50 net. Address the Orange Judd Co., New York City.

In the Home Circle department we this week commence the publication of a short Christmas serial story. The story is rattling good and will please the young folks as well as the larger young people. By the way, do you ever show the PACIFIC RURAL PRESS to your neighbor or speak to him about it? Some of our subscribers do and some of them send us an extra subscription, all of which we appreciate very much.



A Field Full of Crops Instead of Stumps



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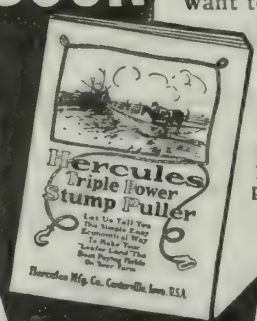

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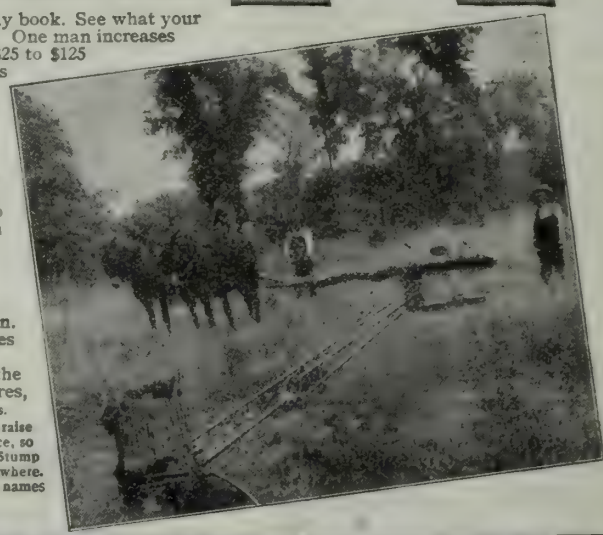

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Northern California Sultana Raisins

[BY THE ASSOCIATE EDITOR.]

The main raisin district of California centers at Fresno and always will do so, yet it is a fact that seedless raisins have been very profitable in parts of the Sacramento valley, and it seems most probable that with the rapid development of the valley and the very favorable prospects before the whole raisin industry, parts of the Sacramento valley will achieve great note in the production of certain kinds of raisins, for conditions are very favorable.

Only seedless raisins, however, will be produced, for quick curing is almost essential, and Muscats are out of the running. Furthermore, the raisins, through necessary curing processes, will have to be bleached. As bleached raisins sell at a premium, this is not a bit of a disadvantage.

There are two leading districts for bleached raisins in the Sacramento valley, Sutter county for bleached Thompsons, and Yolo county for bleached Sultanas. Sutter county is famous for her Thompsons and will produce few Sultanas, if any. Yolo county around Woodland is especially favored for Sultanas and will not produce many Thompsons. It is the latter district with which this has to do.

Although Thompson's Seedless raisins usually sell for higher prices than do Sultanas, there are advantages to the latter, especially in the heavier soil around Woodland. The Sultana is a hardier vine and a more uniform producer. Besides being a hardier vine, in a term of years it will usually outbear the Thompson quite a bit, and gives good satisfaction in every way. In Yolo county it produces very heavily of a fleshy grape of fine quality.

Dipping Grapes at the Yolando Orchards, Near Woodland.

Very seldom is a crop lost. In the decade from 1890 to 1900 there were two or three years when heavy frosts cut down the crop seriously. In the next decade there was but one frost that did any material damage, and since then none. On Yolando orchard, near Woodland, for example, 20 acres of vines give from 30 to 35 tons of dried raisins a year. That means a ton and a half per acre or better, or seven to eight tons of fresh grapes, which is a reasonable amount to expect on rich soil where plenty of moisture is provided and the proper care given otherwise.

Contrary to custom in the Fresno district, the grapes are not trellised, but only pruned high. Whether trellising would pay or not cannot be said, but it is considered unnecessary, and high pruning is less expensive.

The Yolo county and Sacramento valley Sultana generally being a bleached raisin, sells for about a cent more than the untreated sun dried Sultana. It is, however, not sulphured, as are most bleached seedless raisins, and this makes a better raisin when the color is satisfactory, as it is with these. Neither is the cost of bleaching great, but drying in this way is very little more expensive than straight sun drying.

The raisins are first picked in lug boxes holding about 40 pounds each. This picking costs about $2 per ton green, or $10 per dried ton. Instead of being dried in the vineyard they are dried in a drying yard, the same as used for prunes and other fruits. Before drying they are dipped in a solution of sodium bicarbonate, which just takes the bloom off, but does not cut the skin. This reduces the time of drying about half, so what it costs in one way it saves in part in another. A crew of seven men can keep two vats going and turn out 1600 trays a day, 500 trays per ton of raisins.

The stock solution of bicarbonate is a pound to a gallon of water. It is diluted about 3 to 1, the proportion varying with the effect on the grapes, more of the stock solution being added as desired. The grapes are dipped in wire trays in this warm solution and about four wire trays are needed to a vat. A thin layer of olive oil is kept on the surface of the solution, a trace of which touches the surface of the grapes as they come out and gives them the right color and quality. Only a tablespoonful of oil is added at a time and the actual amount of oil used is very small—about one gallon to 500 trays.

This method of bleaching, which was largely worked out by Horticultural Commissioner George H. Hecke, is vastly superior to sulphur drying. It gives as fine a looking raisin as the sulphured article, the raisin has a natural flavor that is very attractive, and is better in other ways. Thompson's can be so bleached as well as Sultanas, and should be.

The raisins are sun dried in 8 to 10 days, being stacked if rain threatens, artificial drying not being necessary. The total cost of making raisins is about $25 per ton, including harvesting.

Given a ton and a half per acre, and, say, only half a cent above the unbleached Sultana price, it can be seen that the industry is on a firm basis, the quality of the fruit being such as to keep it in a secure position in the markets. This yield is well above the average for the State.

The reason for lack of development has been, as it has with other kinds of intensive farming, too good profits in grain, too much land to farm, lack of labor, greater trouble than with grain and stock. Furthermore, the raisin industry until now has been on a very unsatisfactory footing. In spite of these handicaps Sultana production around Woodland has kept up and increased to be one of the leading industries after grain and stock.

The good footing of the raisin industry now and the cutting up of large farms has given Sultana production an impetus that will give it greater prominence in this part of our State.

Of recent years the seedless varieties of raisins have become very popular everywhere in California that raisins are grown. The bleached raisin has been very attractive to the trade in spite of the injury to quality and flavor that has been done by sulphuring. The raisin industry has now come to be on a firm, fine footing, and this method of bleaching that gives a fine-looking raisin and one that in quality is equal, if not superior, to any produced anywhere, bleached or unbleached, should greatly encourage Sultana and Thompson planting, especially in the Sacramento valley, where, in spite of the handicap of poor bleaching methods and an unsatisfactory condition of the industry at large, these raisins have paid well and increased in acreage.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Dec. 9, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.06	6.93	11.74	64	38
Red Bluff	.00	5.26	6 77	62	32
Sacramento	.00	4.63	4.53	54	30
San Francisco	.00	6 65	5.06	58	44
San Jose	.00	4.27	3 86	64	32
Fresno	.00	2.22	2.40	62	30
Independence	.00	2.97	2 32	72	20
San Luis Obispo	.00	4.92	4.03	76	32
Los Angeles	.00	2.98	2.82	78	44
San Diego	.00	2.29	1 65	72	44

Out in the World Again.

[BY THE EDITOR.]

It was Jason who sailed with a bunch of knaves from Argos after the Golden Fleece and returned with that auriferous pelt from the first trip. In that respect Jason certainly had one on the "American Commission on Agricultural Finance, Production, Distribution and Rural Life," for they were not skillful enough to strip off the fleece at sight. They did, however, bring back the whole ram, and have been very busy during the last four months trying to whack off the fleece. How well they have succeeded remains still to be seen.

The kind of historian which deals with this sort of thing agrees that Jason, though he was a bold enough buccaneer, as buccaneers go, never would have secured the golden fleece, but would have probably fed his own skin to the dragon, if he had not made a deal with Medea, who was surely a wonder in the application of the suffragette methods of that day, which, from the way they came through, must be considered superior to popular methods of that kind of the present day. For Medea used divination, sorcery, murder, and a few other things which are not now available to reformers—all of which indicate that Medea had advantages in wool-gathering, and may cause one to overlook the tardiness of the American Commission in setting before the American people the Golden Fleece of Agricultural Credit, cut free, tied up, and ready for the scouring which it will almost surely receive.

It now becomes necessary for the members of the American Commission to gather from the various states which sent them across the sea, and, by assembly in Washington, jointly determine the nature and substance of the report best calculated to inform the American people on European methods of financing agriculture and what may be done to make money easier for farming in this country. It is this errand which carries the writer away from the sunny December of California into the region of blizzards, drifts, and dull skies which lies eastward of the Sierra Nevada. Unfortunately, he has to make this trip alone, for Colonel Weinstock is forced by other public business to remain in California. This writer is therefore rolling eastward as he writes—with such apprehensions of a chill as he cannot suppress by thoughts of the trousseau of winter clothing gathered up from tenderfeet in his neighborhood, which is riding in the baggage car. It is thirty-eight years since he felt the teeth of an Eastern December, but memory of them is sharp as though they had him by the ears of yesterday.

Why Is There Interest in the Report?

It must be looked upon as somewhat new for any considerable part of the American people to be looking for the report of an investigating committee sent abroad for study. This is not because such reports have been few, for there have been hosts of them. Commissions have looked into nearly everything foreign; but, whether it was codfish in the Atlantic or seals in the North Pacific, or whether the study had to do with the monetary systems of all nations, each of the several subjects interested a relatively restricted class of people, and the cords of reports, under the old non-selective method of distribution, were piled up in the pathways of the wrong people and kicked by them into the limbo of document dealers. All this is being done more intelligently now, and still it is true that only now and then a government report fills a long-felt want or is clamored for in advance of its appearance. Quite different is the attitude of the people toward the forthcoming report of the American Commission, and for several reasons: first, three Presidents of the United States have promoted efforts of which it may be said to be the first culminating step toward realization; three or more national political parties called for it in their platforms in 1912, either directly or suggestively; the sitting President of the United States waits to prepare a special message, and asks Congress to be ready to act upon it this winter. All these constitute phases of publicity very widespread and unique, and reach all people. Beyond these are, of course, the natural interest of all those engaged in any line of agricultural production and development, and all those who have to do with the lending of money and promoting capitalization of industries. There probably never was a government report from which the public generally anticipated so much.

What the Report Will Be?

Of course, at this time, in advance of final action of the Commission, one can only speak of forms and not of substance; for the latter is still to be agreed upon. The manifest purpose of the Commission is to make its report not only valuable in substance, but available. Many efforts at inquiry would have yielded more if they had not concealed their bright grains of truth beneath bushels of chaff. Single reports sometimes go into volumes fit to fill or exceed President Eliot's "five-foot shelf," and few people can read or even give them house-room. The condensation to practicable limits of time and space which the American Commission has held in mind from the beginning is realized in the announcement that the "evidence" gathered by the Commission during almost daily meetings and actually continuous observation is to be presented in 878 pages, which keeps it within the limits of a single volume. The breadth of the inquiry and the relative gatherings in different parts of Europe is pertinent, as follows, the figures indicating the number of printed pages given to each of the countries named:

1.	Italy	96	11.	Holland	22
2.	Egypt	6	12.	Denmark	48
3.	Roumania	4	13.	Norway	14
4.	Hungary	56	14.	France	138
5.	Austria	38	15.	Spain	46
6.	Bohemia	14	16.	England	28
7.	Russia	34	17.	Wales	20
8.	Germany	182	18.	Scotland	8
9.	Switzerland	28	19.	Ireland	66
10.	Belgium	30		Total	878

Other Parts of the Report.

It has been the plan of the Commission to present its report in several subdivisions, so that the reader can partake of all or of parts of it as he sees fit. For example, the "evidence" just referred to is the testimony secured at meetings or visitations, submitted without comment—reduced by exclusion of whatever is not significant or pertinent. The reader can study this, if he desires, and reach his own conclusions without interference or suggestions. Or, if he is not of an investigating turn of mind, he can cut out the "Evidence" and take up the comments, which comprise the Commission's interpretation of this "evidence," and thus reach conclusions made to order. This will be presented under the title "Observations," which is intended to be a popular summary of the work of the Commission, together with such suggestions and comments as would seem to be most helpful to the American farmer at the present time along the lines of the work of the Commission.

Another subdivision of the report will be the conclusions reached by the "United States Commission", which is a body of seven members appointed by President Wilson under authority of Congress for this purpose, to wit: "to investigate and study in European countries co-operative land-mortgage banks, co-operative rural credit unions, and similar organizations and institutions devoting their attention to the promotion of agriculture and the betterment of rural conditions."

All members of the United States Commission are members of the American Commission—but not vice versa. The American Commission is about ten times as large and is composed chiefly of those appointed by the Governors of the States and of the Canadian provinces. The United States Commission, having been created by the administration of President Wilson, may be expected to bring in some goods directly serviceable to that administration as well as for the general welfare of the country, and there is, of course, a chance for a difference of opinion as to how far those two terms are synonymous. The United States Commission is expected to bring in some recommendations for specific legislation, and whether the American Commission will be ready to approve them remains to be seen. It is earnestly to be hoped that such recommendations may be acceptable, and that a single line of attitude and policy on the part of the United States Government will be enthusiastically agreed upon. In that case the report of the United States Commission will become a part of the report of the American Commission, and will constitute that part of it which may possibly be called "Recommendations."

The President's Attitude toward the Commissions.

It is evidently President Wilson's expectation that the report of the smaller commission of his own manufacture will be the basis of his official action, for in his message to Congress last week he used these words:

"The farmers and the Government will henceforth work together as real partners in this field, where we now begin to see our way very clearly and where many intelligent plans are already being put into execution. The Treasury of the

United States has, by a timely and well considered distribution of its deposits, facilitated the moving of the crops in the present season and prevented the scarcity of available funds too often experienced at such times. But we must not allow ourselves to depend upon extraordinary expedients.

"We must add the means by which the farmer may make his credit constantly and easily available, and command when he will the capital by which to support and expand his business. We lag behind many other great countries of the modern world in attempting to do this. Systems of rural credit have been studied and developed on the other side of the water while we left our farmers to shift for themselves in the ordinary money market.

"You have but to look about you in any rural district to see the result, the handicap and embarrassment which have been put upon those who produce our food.

"Conscious of this backwardness and neglect on our part, the Congress recently authorized the creation of a special commission to study the various systems of rural credit which have been put into operation in Europe, and this commission is already prepared to report. Its report ought to make it easier for us to determine what methods will be best suited to our own farmers."

Of course, a president has to build with the blocks which he has in his own stoneyard, and this material is his own commission. It is easily imaginable that if the American Commission can endorse the work of his commission, the President will be glad to inscribe its name upon the rural credit temple which he is anxious to set up. We shall soon see how this will work out. There are lots of politics in it all, of course, but they are of a kind which all politicians have to play. A political party which dared to leave the farmer out of its platform would build upon political sand. The farmer is the rock to build on: sometimes the rock to split on. We shall see.

The Report Cannot Be Complete.

Although the American Commission has worked diligently since its return from Europe, about August 1, it has been unable to complete its report for approval by the general meeting held in Washington this month. The main rush has been made on the subject of rural credit, because that was the fundamental idea in the creation of the Commission and because this is the end which, as shown above, the present administration desires to tackle first. The subdivisions relating to co-operation for production, distribution, organization of agriculture, and country life will be worked out later. The American Commission has constituted itself a permanent body and has an idea that it will find a field of work for several years at least in directing the movement for agricultural co-operation and guiding the effort for organizing agriculture and rural life in its various activities.

These statements will, we hope, give our readers an idea of the internal workings of the American Commission. Its reports when printed will be available for general distribution, and will, we hope, serve as a basis for earnest interest and effort on the part of farmers, singly and in their local organizations. Without this it will all be of little avail.

Queries and Replies.

An Alkali Investment.

To the Editor: In conjunction with some associates, I have recently examined certain lands in which little alkali was visibly present, but which on analysis shows a black alkali content of from a trifle under 0.10 to 0.25. The lands are not sufficiently valuable to warrant the use of gypsum or other neutralizing agent, nor are the conditions such as to render flooding and washing the soil out practical. There is no portion where the content runs above 0.3 of 1%, but the average would probably be 0.15. In actual practice, has it been found that good crops, of alfalfa for instance, can be raised in soil having this alkali content? There is apparently no sodium bicarbonate, and sodium chloride and sodium sulphur are found only in minute quantity.—K. S., Los Angeles.

You can get from the University publications concerning the tolerance of different crops for alkali. They are too detailed and conditional for us to enumerate. One should naturally be very careful about making investment in land which cannot be improved. There is always danger that the soil may become more alkaline near the surface by rise from below, especially when irrigation water is used in a soil of defective drainage. There is no profit in keeping just on the edge of alkali injury. It is vastly safer to get farther from it.

Walnuts in San Joaquin County.

To the Editor: Can you tell me whether English walnuts can be grown in the vicinity of Lodi, San Joaquin county? What kind of soil do they require? Do they need irrigation in the summer? Please inform me where I can obtain a book or pamphlet on English walnut and also almond culture in California.—C. A. G., Petaluma.

Walnuts can be grown very successfully in the Lodi district and other parts of the Sacramento and San Joaquin valleys with somewhat similar climates. In fact, this part of the State promises to soon become a very prominent walnut section and can be highly recommended. Visit the walnut orchard of Dr. W. W. Fitzgerald between Lodi and Stockton as an example of methods and success. The walnut requires a deep, rich, well drained soil, rather heavy if possible. Irrigation is absolutely essential for real commercial success in this district in practically all suitable locations. The walnuts can be grown in alfalfa if such irrigation is sufficiently abundant, and will do finely. The best variety for the location is probably the Eureka, with proper strains of the Franquette and Mayette highly favored also. There was a bulletin of the University of California by Ralph Smith on Walnut Culture, which was so good that the edition was exhausted. There is an excellent bulletin of the U. S. Department of Agriculture, Washington, D. C., also, which possibly may be charged for slightly. We also hope to publish soon an address of Dr. Fitzgerald delivered at the Fruit Growers' Convention, which will suit your purposes excellently. So far as we know, there is no better or fuller description of almond methods than is given in "California Fruits," by Prof. E. J. Wickson, which also discusses walnut growing in detail.

Walnuts for Grafting.

To the Editor: What is the method of preparation, time and manner of planting of the native black walnuts with a view to securing nursery stock for budding purposes? We have a walnut tree probably seven or eight years of age, and very good size for that age. Up to this year it has borne no nuts at all, and this year it had one nut with a shell just like a walnut but it was about the shape of an almond. Would you advise grafting over this tree next spring or leaving it for another season?—E. S., Porterville.

The nuts can be planted immediately in a loamy soil not subject to standing water, or they may be kept damp in sand and planted out when the ground begins to warm up after the heavy rains and frosts of January. As to the almond-shaped walnut, of which you send drawings, we would keep it another season to see what it produced. It might be an interesting novelty, or this one fruit may have been abnormal in some way and not prophetic of the normal product of the tree.

Walnuts in the Mountains.

To the Editor: I live in a mountain valley, about 4000 feet elevation, and it gets pretty cold in winter, with some snow. What do you think of planting the Franquette walnut? They tell me that it will grow even in a higher altitude. The trees are to be grafted on native black walnut. What do you think of second-generation seedlings? Some are selling that they claim are as good as grafted stock.—J. D., Cahuilla.

There is no difficulty about walnuts at the elevation you speak of, providing the tree keeps dormant and frosts do not occur after it has started growth. One cannot tell how that will be in your situation without observing the behavior of the trees. Do not make a large planting without knowing. The Franquette is a good, hardy variety, blooming late, and therefore suitable for you to try. We prefer trees grafted on the native black walnut to the second generation seedlings.

THE BLIGHT-PROOF PEARS.

To the Editor: I read with much interest your reply to the query under "Alfalfa and Alkali" in your last issue. I hope I do not offend if I ask you why you did not tell him the rest of the story—that it is worse than useless to plant the Bartlett in alkali soil, because it is practically impossible to control the pear blight in such a situation. For myself, I would appreciate a list of the commercial pears that are blight proof. I have over 20 acres of alkali land and am risking a start with about 200 Winter Nelis this winter. When I say "blight proof," I of course mean practically so.

Marysville. HOWARD REED.

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The Fruit Growers' Convention.

[By the Associate Editor.]

The fame of the Santa Clara valley as a fruit section is enough to justify the expectation of a good convention of the State Fruit Growers' Association and results in harmony with those expectations. More actual fruit growers were present than at any of the last few conventions, the hosts provided the best facilities for such a convention, and the meetings ran much smoother and truer to schedule than is the case with the great majority of conventions. The meetings all started practically on schedule time and there was very little confusion or waste talk.

In certain respects the matters taken up for action are more important than the papers read and discussions of same. From this standpoint the question of standardization, especially of table grapes, was a leading feature. All preceding conventions where this was brought up showed unanimous favor of standardization and of a realization of the necessity of preventing the shipment of unripe or inferior fruit. Methods of doing this have differed, but the matter came to a head here in a demand for a State standardization law for deciduous fruit and grape shipments. Grape shippers are the biggest offenders, and the State Viticultural Commission, in a communication to the convention, in a certain way gave the start to the matter at this time. Voluntary standardization, in a few cases a great success, in other cases has utterly failed on account of one or two shippers, and State control is demanded to save parts of the table grape industry from ruin, while it is needed greatly for other fruit shipments also.

Other economic points were eagerly discussed at every opportunity offered, though few opportunities were given. One of the most enthusiastic discussions followed Col. Harris Weinstock's talk on "Farm Credits," the talk also switching over to co-operation or other possible means of putting the fruit industry on a sound financial basis.

One of the points where good progress is made to help fruit marketing is in the work on the committee on transportation, which again showed the absolute necessity of reducing the minimum carload from 26,000 to 24,000 pounds. The committee has got the matter through the State Railroad Commission, and with its support, to the Federal Government. The fruit growers' convention urged favorable decision on this reduction. The convention endorsed by resolution the amendment to be voted upon next November in favor of local control of taxation methods. A committee was appointed to attend the Inland Waterways Congress to be held in San Francisco in January, in line of cheaper transportation. The convention called upon the postmaster general to permit the shipment of dried fruits, nuts, and such farm products in sealed packages on the same basis as manufactured products. Much attention was given to the dangers of the Mediterranean fruit fly, and the Federal quarantine was called upon to take steps to prevent its introduction from Hawaii in ways that the State Quarantine office is powerless to touch. Resolutions were passed highly approving the work of the State Quarantine in keeping out this and other pests, as well as some other lines of work of the State Quarantine Commission.

None of the papers delivered in the convention can be spoken of here without speaking of all of them, though several will appear saparately in more or less detail. The big majority were highly appreciated. If any criticism could be offered it would be that too little time in nearly every instance was given for discussion following a good address. On soil, walnuts and other subjects, questions from the floor or observations of members of the association had to be cut short owing to lack of time. These discussions are frequently the most valuable part of a subject, as by them a person can find out just what he wants to know and practical points are brought out that frequently are not touched in formal talks on the matter. There is, according to some opinions, a little too much schoolmaster methods in the plan in having long papers that repeat facts which most everybody knows and give too little time for discussion of hard and practical points. At least lots of fine information was developed in discussion from the floor, and usually the program made it necessary to cut this as short as possible. However, from every standpoint these meetings are valuable and pleasant for attendants, as meeting and hearing things in person is enjoyed more as a rule than reading about things could be. Speaking of the above and making the suggestion is meant to show no lack of appreciation of these fruit growers' conventions, and of this one in particular, which was one of the best of recent years.

The next convention is to be held at the University Farm at Davis in the summer, when the University will be host and partly in charge of the program, and it is to stand out in special importance in many ways. The convention a year hence will most probably be held at some southern California point.

The County Horticultural Commissioners' Association met a day before the Fruit Growers' Association, and at times during the latter, as has been the case before. It would be better if this divided interest of the commissioners could be avoided, though apparently this is difficult, owing to the necessity of the commissioners meeting together to discuss important matters when opportunity offers. The newly elected officers of this Association are: President, Harry P. Stabler, Sutter county; vice-president, S. A. Pease, San Bernardino; secretary-treasurer, R. S. Vaile, Ventura; executive committee, G. H. Hecke of Yolo (chairman), R. P. Cundiff of Riverside, Mr. Weinland of San Diego, A. G. Schulz of Tulare, Mr. Sweet of Contra Costa, Geo. A. Lammiman of Shasta, and W. H. Volck of Santa Cruz.

The commissioners appointed nine of their number to investigate the quarantine laws and to suggest legislation to improve quarantine conditions where found necessary. They also requested the State Horticultural Commission to map out as well as it is possible the distribution of insect pests and diseases through the State as a guide in inter-county and other quarantine laws and ordinances.

A committee was also appointed to consult with Dean Hunt, of the University of California, to see if it would be possible to merge the offices of county horticultural commissioner and farm adviser. The appointment of farm advisers gives one of the greatest opportunities for farm improvement in the United States. The horticultural commissioners and their inspectors, which in some cases are very numerous, even now act partly as advisers along horticultural and agricultural lines. A logical proposition is to enlarge the scope of the work of the commissioner with the financial support offered by University and Government for farm advisers (better termed agricultural agents) and have one official, with assistants to look after both plant quarantine, horticultural inspection, and the other work of horticultural commissioner and also act as adviser, since all this work is so closely related and interconnected.

The work of the Fruit Growers' convention and the Horticultural Commissioners' convention, in a way a part of the former, is seen by the above to be getting at the fundamentals of things. Although the programs have been given largely to better horticultural methods, much of the discussion turned to the improving of social and economical conditions in the country. A farmer should not rest with raising good fruit or other farm products, but should also be able to sell what he raises at good prices, without difficulty and in a way to widen and help markets, so that farm living conditions will be better. As time goes on, more and more attention to these things will be given in these conventions.

Blossom-Time In San Jose District.

ADVANTAGES OF ALFALFA IN ORCHARD.

[By the Associate Editor.]

There is more alfalfa being planted between fruit trees every year, though many fruit men are very doubtful as to the advisability of so doing. Experience has generally proved, however, that where the trees are far enough apart and moisture has been sufficient for both tree and alfalfa, it is a profitable thing to try to get such double use of the soil.

At the Milgeo orchard of J. S. Moulton, Ripon, alfalfa is grown in a peach and walnut orchard with excellent success. There is a growing conviction that the part of the central valley near the opening into the bay district is a coming walnut district, and the Moultons wanted to try out walnut culture and walnut varieties. The soil is a sandy loam, but the walnut, which generally is thought to require a medium to heavy soil, seems to do very well.

They are planted 50 feet apart on black walnut root and peaches between. That is, the rows are 25 feet apart, with half the trees in alternate rows walnuts instead of peaches. Later on when the walnuts need more air or soil, or shade out the peaches, the latter will be removed, leaving walnuts in alfalfa.

Along each row of trees there is a cultivated strip 10 feet wide. The soil is ridged up to make a kind of long narrow check for the alfalfa between the rows. That means that there are alternate strips of cultivated soil 10 feet wide with trees down the middle, and of alfalfa 15 feet wide. In other words, three-fifths of the land is planted to alfalfa and all of the land planted to trees, for these would be set probably 25 feet apart anyway.

Speaking of walnuts, we would say that it would be safer in rich soil to have every third three in every third row a walnut, which would make them ultimately 75 feet apart in alfalfa, but that is only incidental.

An inspection of the orchard shows that the peach trees in the part of the orchard that is planted to alfalfa are fully as thrifty and fine as in the wholly cultivated portion; in fact, they are better than where irrigation water was rather scarce. At the same time the alfalfa is far enough from the trees to be unshaded and looks as nice as

in the open. About six tons per acre was taken off this year, counting as an acre only that which is actually to alfalfa and not counting the uncultivated strips.

When the alfalfa is irrigated it is intended to keep the water on it only, though it generally gets on the cultivated portion also, dirt being thrown up against the trees to prevent actual contact of bark and water. After irrigation, the bare strip is cultivated. As much cultivation as this is done over all the orchard where no alfalfa is grown, so actually cultivation is saved and the only extra expense is for extra water for the alfalfa and the harvesting of the alfalfa. Good irrigation of alfalfa appears to supply a full amount of moisture to the trees and they do not suffer from drouth.

The water comes from a pumping plant, but next spring, water from the South San Joaquin irrigation district will be available.

Now the point of most interest to readers will be regarding the walnuts. The greatest objection to walnut culture in the big valley is sunburn. Against this, alfalfa seems to be an excellent protection. Our investigations were conducted in the hot spell of the middle of September, when all California could sympathize with sufferers from Eastern summer weather. Walnut trees all over the State were affected more or less by the heat, especially since the leaves had nearly lived out their lives and were nearly ready to drop anyway.

Dry leaves and bare branches were especially noticeable on the south side and on the lower branches where the ground was bare, for the bare soil reflected back the heat. In the alfalfa there was a marked lessening in sunburn and that on the lower south side was entirely absent. We all know that on a hot day it is cooler in alfalfa than on bare ground, and this demonstrates that alfalfa among walnut trees in this district is a protection against what was once the main objection to walnut growing in the big valley, and besides is of big value on its own account. Sunburn, by the way, seemed to hurt very few nuts, in spite of leaf injury.

Incidentally it may be stated that the red spider did lots of damage to the walnut last summer. When July came around the spider did not seem to be present, and no sulphuring was done, yet it showed up strong enough later to make lots of leaves fall off and new growth started. Next year sulphuring will be done and this trouble overcome at very little trouble or expense.

The walnut planting has been experimental and all sorts of varieties tried with a few exceptions. The many different varieties tried, the missing of grafts and the freakishness of walnut growth in early stages gives a rather uneven lot of trees. However, there are enough large vigorous trees that are bearing large crops of fine nuts to prove the great possibilities of walnuts in such soil and climate. There was no sign of either aphis or blight, the two main pests of the walnut, though blight, of course, may do lots of injury to susceptible varieties. The experience has been so satisfactory that large commercial plantings will later be made.

Stimulation by Spraying.

[By W. H. Volck, Horticultural Commissioner of Santa Cruz County.]

[Spraying was started to overcome diseases. Later it was seen that another positive benefit was secured by the stimulation of the tree and a gain in health and vigor additional entirely from benefits from removal of moss, scale, and other insects, or checking of disease. Winter spraying to overcome difficulties is highly to be commended, also spraying for tree stimulation, the latter point being especially emphasized in the following, which is taken from an address of Mr. Volck to the county horticultural commissioners at San Jose. His address should have been to a wider audience, the Fruit Growers' Convention, but this part will reach a still larger audience by appearing in these columns.—Editor.]

Most of the troubles of trees effect the surface tissues or have stages in their development when the surface is attacked. This fact makes it possible to control most orchard pests by surface applications, and has resulted in the development of spraying as a special means to be resorted to as occasion demands.

Spray materials are applied to the surface of trees, but we have learned their action is less superficial. The bark of twigs and the surface of leaves is porous and admits of a certain amount of penetration. All spray materials penetrate to some extent and so may modify the reactions involved in growth. A study of these effects has shown that they may be either injurious or beneficial. Naturally we desire the beneficial effects, and it has been possible to choose methods of treatment which stimulate growth and increase production apart from any control of pests. In some cases such marked stimulation may be brought about by spraying as to make this effect of primary importance. Here, then, is a new aspect of the spraying problem, one appreciated by few growers or even horticultural students.

The fact that spray materials may have an intrinsic value practically demands that this condition be met to as large a degree as possible, and the ideal mixture is one that will produce sufficient invigorating effect to make the application profitable, regardless of the presence or absence of pests. With such a spray material it is not necessary to inquire if pests are present or likely to develop in quantities sufficient to warrant spraying, but the application becomes a matter of regular practice like cultivation. Under these conditions, pests will be constantly reduced to a minimum.

During the dormant period trees will withstand strong applications, and derive benefit from treatments which would be ruinous when in foliage. For this reason the dormant period is a very favorable time for spraying. The application may be made strong enough to subdue the most resistant scale insects and at the same time induce a marked stimulation the following season.

Emulsion Sprays.—There is, fortunately, a spray material which combines these qualities to a marked degree, namely crude oil emulsion. Distillate emulsions have a similar effect, but are generally more expensive for the same degree of control and stimulation. By crude oil is meant the natural oils of California as they come from the wells. These do not differ so materially as to make the particular variety of much importance. The most essential feature for the proper working of crude oils is the content of emulsifying body. The presence of such bodies cause the oil to break up into a fine emulsion when mixed with soapy water to which a little lye has been added. The amount of soap varies with the hardness of the water and must be sufficient to completely soften it.

The proper concentration of oil for thorough work on scale insects, red spider eggs, etc., is close to 12 per cent. Twelve and one half per cent makes a convenient dosage as it then requires 25 gallons for each tank of 200 gallons. A good formula follows:

Water	175 gallons
Lye	2 pounds
Soap (whaleoil)	12 pounds
Crude oil	25 gallons

Place in the tank in the order mentioned with agitator in motion. When solid soaps are used it is of course necessary to first dissolve them in hot water.

The crude oil spray may be applied to a wide range of trees such as apricot, prune, almond, cherry, apple and pear. These trees can be maintained nearly free from pests and in excellent growing condition by annual crude oil treatments. The apricot is best treated when the buds are swelling or even after a few blossoms have opened. The same is probably true of the prune and almond, but the apple and pear respond most to midwinter spraying or when thoroughly dormant. Crude oil is applicable in most cases, except where serious fungus diseases are present that yield only to winter treatment. The peach is an example of such an exception for we have the leaf curl and blight requiring winter treatment with a good fungicide. Lime-sulphur and Bordeaux mixture are best adapted for such cases.

Nitrate of Soda.—The lime-sulphur solution is well and favorably known as a winter spray, but stimulating effects are not very apparent, though they have been observed at times. Fortunately, recent investigations have demonstrated that it is possible to modify the lime-sulphur solution by the addition of other materials and so produce almost any desired stimulating effect. The most promising additions are nitrate of soda and nitrate of lime. Such a mixture has proved highly successful with pears when applied when the trees were thoroughly dormant. The mixture consisted of one pound of nitrate of soda to the gallon of diluted lime-sulphur.

Apples also respond strongly to solutions containing nitrate of soda. The application of nitrates to tree tops is here sighted as indicating the trend of modern spray development toward materials which will produce marked improvement in growth and fruitfulness. Much more could be said about special winter treatments, but brevity fixes a limit.

[The reference to nitrate of soda spraying will be of special interest to our readers as indicating the advantages of same, also a slight change in methods at first advised. Frosts and other factors have lessened the value of the experiments conducted last spring in places where the most of such spraying was done, though Commissioner Volck's references will show the outlook, and the benefits in general of good winter spraying. If any of our readers tried nitrate of soda spraying last spring and had definite results, other readers would appreciate reports.—Editor.]

IRRIGATING ALMONDS.

To the Editor: I lost about 40% of my young almond trees this year on account of drouth, but now have a good well and pumping plant so that I can irrigate the trees to better advantage next year. Some of my advisers are of the opinion that if the almond trees are irrigated the trees will not have the tendency to become so deeply rooted as they would if the top of the ground were kept dry, forcing the roots to go downward for moisture. My problem is this. I must plant about 40% of the acreage new, and judging from this year the trees will have to be watered next year to keep them from dying. I would like to determine, if this will be any great disadvantage to the 60% of second year trees. Upon the supposition that I would irrigate all throughout next summer, if the question of irrigating has so much bearing upon the rooting of the trees, would it not be better to water them all next year and water them less, or not at all the following year?

Yolo. Planter.

[Irrigation of almond trees on a deep, free soil such as should be selected for the almond will not produce undesirable surface rooting, if the irrigation water is applied in considerable amounts so as to secure deep penetration rather than frequent light applications which would confine the moisture to the upper layers of the soil. Rational irrigation will undoubtedly be good both for young trees and old and irrigation water is exceedingly desirable always in case supplies from rainfall should be inadequate. There is no need to be worried about it: if the soil does not have moisture enough, irrigate and be glad that you have the water.—Editor.]

THE EARLIEST PEACH.

To the Editor: Answering some questions of L. E. Blochman in current issue of the Rural Press, in our experimental orchard, Brigg's May and Alexander peaches ripen within a few days of each other—sometimes we pick the first ripe peach from one, sometimes from the other, but generally Brigg's May is a little ahead. Greensboro is later and not as good as either of these others. Mayflower is undoubtedly the earliest

Leonard Coates.

Morgan Hill.

How to Overcome Alkali.

[By the Associate Editor.]

The whole proposition in overcoming alkali is summed up in this: Keep the moisture moving downward and you will win out; let moisture move upward, that is, evaporate from the surface, and the alkali will win out. Of course, it is sometimes too tough a job to get the alkali to go downward, but that leaves the principle as true as ever.

Now the ideas of alkali held by some people who have to deal with it are about as far removed from the ideas of scientific investigators as they could be as far as the reasons for doing this, that or the other thing is concerned, but when it comes to practice scientist and farmer both agree in the main, and it is easy to explain why alkali practice is right and how the thing works. It might be a help therefore to get at reasons as applied to methods.

The time will come in the not distant future when practically all good alkali land in California that there is water to irrigate with will have been reclaimed. It will be worth it, too, and the reclaiming will largely come without great effort or expenditure of money. Such land is good land, for universal experience in arid countries is that some alkali is a fine thing for the soil. It ought to be said right here also, that ordinary amounts of alkali in the soil will not hurt most vegetation if the alkali is evenly distributed. It is only when it is concentrated at the surface that it kills. Nature is satisfied if the alkali is washed below the surface and man can be satisfied with that too.

How Nature Works.—The advantages of keeping the moisture going down, or at least from evaporating from the surface, are obtained in nature. The only way alkali moves is in water. Rains come on virgin soil and find grass on top so that the water can sink in nicely and take the alkali with it. The grass at the surface makes evaporation go slowly and before much can be evaporated the water is pulled out through the roots, leaving alkali from a few inches to a couple of feet down below the surface, where the rain took it. If man can keep the process up he is all right. If he lets the moisture evaporate from the surface the alkali comes to the surface too, and stays there because it cannot go off in the air with the water and so it forms a crust that kills vegetation. When the crust forms evaporation goes on all the quicker for one thing and water won't sink in easily either to take the alkali down, so it is worse and more of it.

Keep it Going.—To overcome the alkali we have to imitate nature in two ways. For the first we have to prepare the surface so that the water will sink in and so it won't evaporate off after it is in. This is the customary way of tackling alkali in alkali districts. The plan is simply plowing and tearing the surface up generally to make a mulch. Cultivation has to be done a little different from the ordinary to keep the surface from running together, for alkali runs together easily. Thus the soil is generally left all torn up by the plow and is not smoother down by harrow. Such plowing puts the surface layer of alkali several inches under the surface and connects it with the soil moisture where possibly it is drawn under a bit. At least, when a rain comes the rough ground makes the rain soak in freely and of course takes the alkali down with it Then just as every good farmer cultivates after a rain to prevent evaporation, so the alkali fighter must cultivate, and for the same reason, for when the water comes up, up will come the alkali too. This is the accepted way to overcome alkali.

The above imitates nature by providing a mulch on top. The second way of imitating nature is to apply irrigation water to wash the alkali in, just as rains on virgin land wash it downward. Only it goes without saying that there has to be some place for the water to go to, and that is the one thing that the farmer has to attend to. If there is a crust that will not let the water sink in, he must plow and make a mulch. If there is a hardpan he must dynamite it or in other ways get through it. If the water table is only about three feet down, irrigation water stays where it is put, it does not sink down and irrigation does harm and not good. They do say that a man can beat alkali in such conditions by putting in tile drainage, and the University is trying this on the Kearney Ranch, but anything under the sun that will give a place for the water to go to is all right. Good, loose soil for eight or ten feet is all that is needed. Even alkali water on alkali land will overcome alkali if it can sink down and University authorities used to say to people who had alkali, "Use more water and wash it down." The plan works as long as there is a place to wash it to.

Pumping and Alfalfa Help.—Two great helps against alkali are working over nearly all of the southern San Joaquin valley now—pump and alfalfa—simply because they draw surface water down and give irrigation water a place to go to and take the alkali with it. Irrigation from ditches many places has lifted ground water to within a few feet of the surface and salt grass or bare spots cover much ground. The extensive pump ir-

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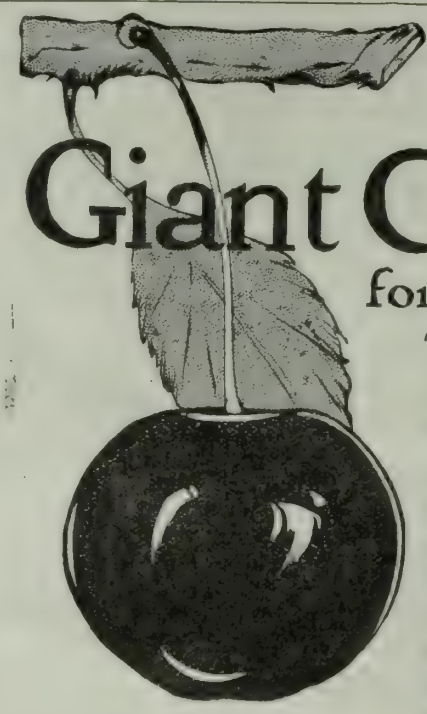

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rigation lowers the water table to some extent, even though pumping is from deep stratas and gives irrigation water a place to sink to. Thus in much of the south San Joaquin valley the water table is six to ten feet lower this fall than it was three years ago, though dry years are about as much responsible for this as irrigation by pumping.

Alfalfa also pulls the water down. It evaporates say 2½ to 4 feet of water a season, which would fill several times as many feet of soil with water. Thus where without alfalfa there would be little moisture evaporated and the water table could stay stationary, an acre of alfalfa would do its part toward pulling the water down as much as ten feet. The great increase in alfalfa acreage and pumping has assuredly done much to pull the water level down and give the irrigation water and alkali a place to wash to.

The process has been completed in natural alkali control over much of southern California. In early days of irrigation alkali gave much trouble, but as thousands of citrus trees and other vegetation pumped the water out of the soil, the pumps from lower gravel stratas pulled it down still more, the alkali was washed down by the irrigation water and alkali is a problem in older cultivated districts only where the water is yet near the surface. Exactly the same work is progressing in the southern San Joaquin valley and elsewhere and it is only a question of time before the alkali will practically disappear from cultivated lands there also.

MISTAKEN IDEA.—A mistaken idea according to the universal agreement of investigators is that alkali can be washed off the land, that is by standing water on it or running water over it. It is a fact that alkali frequently has been beaten by trying this, but with very rare exceptions, the success was mostly due to having the water sink in and carry the alkali with it, not to having it dissolve the alkali, lift it into standing water and go off that way. In other words, as much success would very probably have been secured if a lot of water had just stood on the land and been given a chance to sink in. Therefore, if a person has no place to run water off to, he should get just as good succeed by giving his land several heavy irrigations, first cultivating the soil well.

We would like to see this tried this winter and hope some man with a pumping plant and some bad alkali land that is well drained will check up a piece, plow it up to loosen the surface, put aboout three good floodings on it and report results.

GYPSUM.—Wherever black alkali occurs, without exception, gypsum should be used. Black alkali puddles the soil and water won't sink in or take the alkali with it. Black alkali also keeps the surface rather moist and forms a crust that causes evaporation and brings more alkali up, as an ordinary crust on plowed ground will cause evaporation. Gypsum changes black alkali to white alkali, which is less harmful by far and does not form much of a crust.

The methods of fighting alkali therefore are simple. Put gypsum on black alkali. See that the water table is down and that there is a place for rain or irrigation water to sink to. Plow the land up rough, keep it plowed and never let a crust form or evaporation start. If you can irrigate and get the water to go down, do so; if not, plow and let the rain get down anyhow. Put the wells in to lower the water table all possible.

Alkali can be beaten. If we have lots of rain this year it will be a fine time to tackle it and we want to see the thing practiced, proved, and a lot of good land added to California farms.

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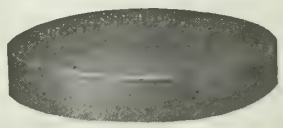

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Fruits From the Vacaville Hills.

[By the Associate Editor.]

The first cherries, and therefore the first fruit from California usually goes out from Vacaville, at the foot of the Vaca valley in Solano county. Later varieties may sometimes be shipped from elsewhere slightly earlier than from here, but the fact still remains that this district is both one of the earliest and one of the finest fruit districts in the State. From a slight elevation near the town, one looks in admiration over what appears to be a solid orchard covering the floor of the valley and it is a wonderful horticultural view. However, the valley fruit is later than the fruit from the hills several miles north and east of town, where a large part of the fruit fame of the district developed.

The hill country is well worthy of fame for other reasons than mere earliness. It is a typical fruit district with rolling hills that are covered from top to bottom and on all sides with fruit trees, the soil soft and well tilled, the slopes never sufficient to make cultivation such a disagreeable task that work is slipped over half done.

An illustration of the unique merits of the district is clear from the following. Hill soil is usually shallow soil, not as fertile as that of the bottom lands, neither is there supposed to be the moisture to carry vegetation through a long dry season that there is on bottom lands. Yet here the trees make fully the growth that could be hoped for on good valley land and after a long, dry summer the trees are as green or even greener in numerous cases than in the valley itself. In other words, the soil is rich and there is all the moisture that could seem to be needed, without irrigation, without opportunity for a movement down from higher land and with only the precipitation to depend on. That this year was about 16 inches, averaging perhaps 25.

The Reason Why.—The explanation of all this is in the sandstone that is the foundation and source of the soils. It is a light porous stone that absorbs water like a sponge and gives it out again as freely. This stone disintegrates freely, which is the reason that even on the top and sides of the hills the soil is deep, far deeper than on most hillsides. Having disintegrated so easily, the hills are rounder and slopes more gradual. From the nature of the sanstone the soil is a loam, lighter perhaps than a medium loam, but hardly a sandy loam, yet sandy enough so that whatever water falls sinks in rather than runs off. Hence nearly all of the rain is stored for use. Furthermore the soil is rich in plant food.

Only 20 to 25 years ago these hillsides were first appreciated as good fruit land, though the valley saw commercial orchards go in during the seventies, at which time the hill land could have been purchased for $10 per acre.

About 25 or 30 years ago it was mostly sheep range and sold in part for $40 to $50 per acre. It was covered with oak and other hardwood trees quite thickly, though sufficient open spaces existed to provide great quantities of grass for the stock. It is a very reasonable expectation that land so wooded be excellent for fruit and the soil fertile.

Nor does long continued culture appear to have materially affected the quality of the soil, particularly the surface soil, which commonly loses its humus with the long summer cultivation that is given California orchards. It still remains well supplied with vegetable matter. The reason for this is in the good growth of winter vegetation. The rainfall is sufficient to bring up large quantities of burr clover and alfileria and the warmth of the hills in winter permits growth to go on rapidly and when the time for spring plowing comes there is enough wild vegetation to turn under to keep the soil in good condition.

The reason that the whole district is so early, including the floor of the valley too, is the way it is sheltered from the cold. It is under the protecting shelter of the Coast Range mountains which swing round a bit to the south to keep off cold winds or fogs from bay or ocean. It is yet near enough to the ocean to receive the moderating influences of the latter when serious frosts are due, and being at a light elevation where cold will not settle, it is in a position where the explanation of early ripening is easily found. Fruit growers claim that practically never do frosts materially affect the yield of fruit. The crops therefore are very uniform, though they are reduced in very dry years.

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Hardy, clean, pure, reliable French Prune, Bartlett Pear, Peaches, Apples, Cherry, Almond and Grafted Walnuts on Calif. Black.

Write or wire us your wants. Special prices for large orders.

TABLE GROVE NURSERIES
A. J. GALLAWAY, R. F. D. No. 2, Healdsburg, Cal.

"MARSHALL" STRAWBERRIES.

Fine strong plants. Now is the time for Winter Planting. Address A. G. CARY & SON, Edmonds, Wash.

FRESH HORSE MANURE

As a fertilizer contains Nitrogen, Phosphoric Acid, Potash, creates Humus, is a soil corrector and will assimilate any fertilizing element that may be contained in the soil. To insure prompt delivery, book your order at once. Write or call on us.

COW MANURE. SHEEP MANURE.

PACIFIC MANURE AND FERTILIZER CO.,
429 DAVIS STREET, SAN FRANCISCO, CAL.

Kirkman Nurseries
RELIABLE TREES AND VINES

There is a good strong demand for first-class trees from reliable nurserymen. We want to again take care of our old customers and supply some new ones with what they will need for this season's planting.

Submit to us a list of what you will need at once, please, for our estimate of cost.

OUR CATALOG FREE FOR THE ASKING

Kirkman Nurseries — Main Office 2500 Tulare Street — Fresno, Cal.

FRENCH PRUNE

APRICOT

WALNUT

and good assortment of other fruit trees.

SPLENDID STOCK ORNAMENTALS

Prof. Wickson's letter on our catalogue; it is free:

"I have deeply enjoyed your last catalogue, both for the intrinsic taste and beauty which it embodies and because of the wealth of pomological wisdom in it. Such a publication is of distinct service to the State."

LEONARD COATES NURSERY CO., Inc.

Morganhill, Cal.

Ettersburg Strawberries

ARE MAKING GOOD, SO REPORTS SAY, FROM FAR AND NEAR

If you are interested in new and better strawberries, unlike anything you have had before, write to Etter and get his booklet on strawberries he has originated and strong testimonials corroborating his statements.

These new hybrid plants are three to five times more vigorous than ordinary sorts and succeed where ordinary sorts fail. **The greatest canning berries the world has ever produced** and the table quality unsurpassed. Bred largely from our native species, making typical California plants to meet California conditions of soil and climate. Many plants ready December 1st.

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Grow Mushrooms

Big profits—little work, no trouble. Anyone can grow them. Plant spawn now—first crop in six weeks. You can sell more than you can grow. You always get big prices. We teach you how. Free—furnish you with the celebrated ARNDT PURE CULTURE SPAWN guaranteed to grow. Write for interesting booklet.

ARNDT MUSHROOM FARM INC.
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Rhubarb for Profit

A Free Book on

Rhubarb Culture

Free for the asking, $1000 profit. Now best time to plant.

J. B. WAGNER,
Pasadena, Cal.
The Rhubarb, Berry and Cactus Specialist.

SANITARY FERTILIZER

The only fertilizer made that is free of fats and oils, and is odorless.

25% cheaper.

Send for pamphlet and analysis.

SAN FRANCISCO DISPOSAL CO.,
Evans Ave. and Keith St., San Francisco.

of fruits grown extensively, peaches, plums and table grapes. It is not a pear soil, nor do pears like hills. Neither is it a place for cherries, though a very few can be found at the bottom of the slopes where two hills come together, for moisture is more abundant there. Neither are apricots extensively grown. The acreage of the W. W. Smith orchard, which is typical of the best of the district, will show how the land is divided among the fruits. Of 58 acres, 18 are in shipping peaches, 20 in plums and the remainder in Tokays, the latter making up almost all of the vineyard acreage in the hills.

Of these fruits, peaches have been the least able of recent years, owing to the development of the peach industry in the southern States, for they frequently get peaches to the market with our peaches, while they cannot compete with our other fruits.

Peach growing does not make the shipping season go along smoother either, for packing and shipping of some kinds of plums could go on at the same time with the early paches and keep the labor just as busy. However, peach profits average up well and much of the acreage will always be given to this fruit.

The production of plums is very profitable here and the district sends out large amounts up until about the first of September, when Oregon plums reach the market and take the edge off the market, and at that time Vacaville can bring earliness to the help of prices again by shippping off Tokay grapes. Vacaville Tokays are not as famous as those of the Lodi district, but they are the first Tokays on the market, which counts up when price is considered and that is why they are popular. Shipments continue up into October, and in fact the Vacaville district can ship fruit of one kind or another as long as the season lasts.

Most of the ranches are large, averaging probably more than 100 acres and many of the owners also live in Vacaville rather than on the ranches, so the only thing that keeps the place from appearing an ideal district is the fact that few country homes are found in it.

On the Smith orchard, as with others, the slopes are gentle enough for an ordinary mould board plow and after harrowing the chisel tooth or duckfoot cultivator is kept going until late in the season and a mulch formed that prevents all evaporation of soil moisture. The climate seems to discourage insect pests and disease for Mr. Smith does not find it necessary to spray, though there is a small amount of curl leaf and sometimes slight damage by the peach worm. The only serious trouble is the root knot.

Mr. Smith was formerly a nurseryman and has given much study to advanced horticultural methods. He had also done a great deal of work in securing or developing new varieties of fruit. One, a Texas seedling, but first fruited by him, he has named the Smiths Extra Early. It is a very small plum, but well colored and of fine flavor, and its earliness has made the few grown sell at very high prices. He has also developed a peach called the Daisy May, which he states is about 10 days earlier than the Alexander. Another plum developed and first fruited by Mr. Smith is the California Blue, ripening with the Clymax. This is a deep blue plum, nearly round and packing about four. It is the first of the domestic group of plums and has been sold extensively by other persons under the name Vacaville plum.

The English Hills, where this ranch is located and from which the early fruit comes, is certainly a wonderful country, and although such a combination of circumstances may not be found elsewhere, the methods used and the reasons for success can give lessons to fruit men who wish to develop fruit land in other parts of the State.

Morse's Prize Strain Pansy Seeds come from the finest Seed Farms in Europe. Fully described in our

1913 Bulb Catalogue

A catalogue replete with descriptions of the newest creations in BULBS—Narcissus, Daffodils, Tulips, Hyacinths, and many of the great Spencer Sweet Pea Novelties for 191 .

Sent Free to Any Address

The finest pansy blossoms grow from seeds planted in the fall.

SEEDS OF ALL KINDS

Seeds that come from C. C. Morse & Co. can be relied on. They bloom into the rarest and most beautiful flowers.

Morse's Alfalfa and Grass Seeds Cannot Be Equaled. Planting Instructions Cheerfully Given.

C. C. MORSE & CO.

Largest Seed House on the Coast

117 Jackson St., San Francisco

Now Is The Time To Plant TREES

Millions of Dollars

are paid to fruit growers of California every year and still the fruit industry is in its infancy—An orchard planted to the proper varieties will produce

A Splendid Income

provided healthy, vigorous nursery stock is used. We have a fine assortment of first class deciduous and citrus fruit trees; also ornamental and shade trees and cordially invite your inspection.

Call and talk it over with us, or write for our 1913-14 catalogue.

SMYRNA PARK NURSERIES, Inc., Ceres, Cal.

NATURE'S CROP PRODUCER

Hydrated and Ground Carbonate of LIME Send for Free Booklet

AGRICULTURAL DEPT., UNIVERSITY OF CAL., REPORTS:

"Action of LIME on SOIL—Neutralizes acidity, releases potash, aids in forming humus, aids bacterial activity, aids growth of legumes, flocculates clay soils, makes sturdy trees, increases fruiting, hastens maturity of fruit, makes fruit sweeter, makes soil phosphates available."

PACIFIC LIME & PLASTER CO.

807 MONADNOCK BLDG., SAN FRANCISCO.

FLORIDA SOUR ORANGE SEED-BED STOCK GROWN OUT DOORS

grown without shade, as are ours this season, are vastly superior to those grown under shade.

They are all hard wood, have a magnificent and abundant fibrous root system and, being grown in the sun, will stand up well when transplanted in nursery row. We have the largest Citrus Seedling Nurseries in the State, as well as a good stock of budded trees, Navels, Valencias, Lemons and M. S. Grapefruit. Order now.

SOUTHLAND NURSERIES, F. H. DISBROW, Proprietor.
2141 East Colorado Street, Pasadena, California.

TREES

You have made up your mind to plant "trees"; you may even have decided upon the KIND of trees—but are you absolutely SURE about the best varieties?

Here is where we can help you. We make it our business to study the best varieties to plant. We keep in touch with market conditions and know what sells best and which are the most profitable to the grower. We know what is best adapted to YOUR locality—to every section of the Pacific Coast.

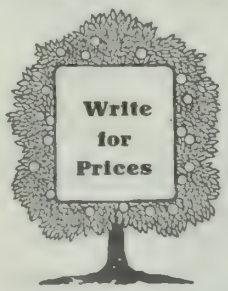
You can have the benefit of our 30 years' successful experience in Horticulture for the asking.

Write us for suggestions. Ask us what varieties are best to plant of any of the following:

APPLES
ALMONDS
APRICOTS
OLIVES
PLUMS
PEARS
PEACHES
LEMONS
ORANGES
POMELOS
FIGS
GRAPEVINES
CHESTNUTS
WALNUTS

and any others that you may have in mind.

We grow everything that grows, including a splendid stock of ORNAMENTAL TREES, VINES, PLANTS, SHRUBS, EVERGREENS, PALMS, EUCALYPTUS, HARDY FIELD-GROWN ROSES, ETC.



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PAID UP CAPITAL $200000

FANCHER CREEK NURSERIES

GEO. C. ROEDING: PRES. AND MGR.
Box 18, Fresno, California

AGRICULTURAL REVIEW.

Deciduous Fruit Notes.

The famous experimental orchard of six acres on the Bidwell ranch, Chico, containing 350 varieties of fruits, has been uprooted.

The Cured Fruit Exchange has attacked the prune crop reports of the U. S. Crop Reporting Board as being far larger than the facts justify, as was the case with a former crop report of the State Commission of Horticulture.

Dried peach men in the San Joaquin may collect subscriptions to the proposed Dried Fruit Co., without employing paid subscription solicitors.

H. S. Smith, superintendent of the State Insectary, has returned from the Far East with a number of parasites of the mealy bug and black scale.

The matter of organizing a dried fruit company on the lines of the California Associated Raisin Co. is making rapid progress. A Kings county mass meeting unanimously endorsed the project, and the subscriptions for $250,000 worth of stock are early expected. There was $70,000 subscribed when the matter was dropped in spring and over all the raisin district growers are believing that the company will put the dried peach business on its feet, as the other company has the raisin business.

Grapes and Grape Products.

No material change in raisin prices is expected after this date. Following the Christmas season, the California Associated Raisin Co. will start an extensive advertising campaign to increase the consumption of raisins throughout the country.

A car of Emperor grapes shipped from San Joaquin county recently sold in New York for $2750, the top price of the year.

Commissioner B. V. Sharpo, of Kings county, reports 552 owners of vineyards in his county and 9817 acres, 9070 of which is in Muscats, with seedless grapes next in acreage and table grapes the least important.

Many meetings of grape growers in the north of bay counties are being held to plan work against the campaign to make the State "dry" in 1914.

Citrus Developments.

A consular report states that the lemon crop of Sicily will be larger than the previous year and the fruit of good quality, though inferior in appearance.

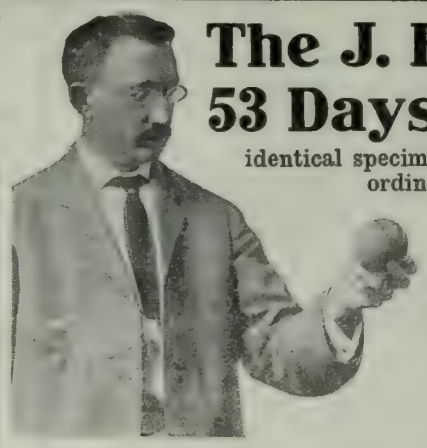
Due to the shipment of rather immature oranges in too large quantities, orange prices for northern fruit took a slump recently, but prices have improved since the fruit naturally has been in better condition. Shipments from Tulare county amounted to 1885 cars by December 8, as against 1002 cars to the same date the previous year.

Reports from Tulare county state that heavy requisitions of orange buds for citrus nurseries have been made this late in the season, 35,000 being ordered by one concern.

Benefit Rural Conditions.

A meeting of farmers and various public bodies was recently held at Turlock to secure the appointment of a farm adviser for Stanislaus county, the county to pay half the salary and the University of California half. The campaign will be carried to completion. Public agricultural progress is indicated in another form in the organization of an agricultural club at Armijo High School, Suisun, and of other similar clubs elsewhere.

An important step in the improvement of rural conditions was made by the recent appointment by Governor Johnson of a Country Life Commission, composed of the following members: Dean Thomas F. Hunt, University of California; Rufus R. Wilson, Eureka; A. L. Scott, San Francisco; Assemblyman W. F. Chandler, Fresno; L. S. Smith, San Francisco; Sen-



The J. H. HALE Peach 53 Days After Picking

identical specimen kept by Mr. W. P. Stark in an ordinary ice-box for 53 days.

"In my 35 years of fruit-growing I have never seen a peach that will make so much money for the grower as the J. H. HALE."
—William P. Stark.

No Peach Before with All These Features.

Immense size like small cannon-ball.
Round, globular shape.
Golden yellow flesh, carmine tinge.
Perfect freestone—meat of a cling.
Firm, yet delicate texture.
Smooth skin—*practically fuzzless.*
Ripens 5 days ahead of Elberta.
Will hang longer on tree.
Wonderful keeper and shipper.
Matchless for canning.
Brings 25 to 50% higher prices.

Shrewd fruit-growers are jumping at this opportunity. From California comes a call for 10,000; from Arkansas for 2,000; from New York for 1,000. Every mail decreases our selected, limited stock. Hundreds were disappointed last spring. We must hear from you promptly if you want your trees this season.

Here in this record-breaking J. H. HALE Peach is the peach Western growers have long been seeking.

Not alone for its gigantic size (one-third to one-half larger than Elberta), but for its amazing keeping and shipping qualities. In this respect it surpasses them all.

J. H. HALE peaches shipped in competition with Elbertas have invariably kept two to three times as long. Their firmness permits packing and shipping almost like apples.

Obtainable ONLY from William P. Stark Nurseries.

As exclusive distributors and growers, we furnish you genuine J. H. HALE peach trees propagated from buds cut by Mr. Hale directly from his bearing orchards.

Peach growers who visited Mr. Hale's Connecticut orchards last fall were astonished at the qualities of this peach. "Largest and most beautiful peach I ever saw," "More profit in the J. H. HALE trees if they cost $5 each than Elbertas for nothing," "We can't grow other peaches and compete with this in the markets," are some of their comments.

You will make a big mistake if you don't investigate this "Million Dollar Peach" **now**—get a season's start! Take the **early** profits!

No Agents—Save 30% to 50%

We sell only by catalog. No traveling salesmen, no agents. Thus we are able to deliver choicest trees **doubly guaranteed true to name**, at rock-bottom prices. You get just what you order, at a marked saving, with the famous William P. Stark quality.

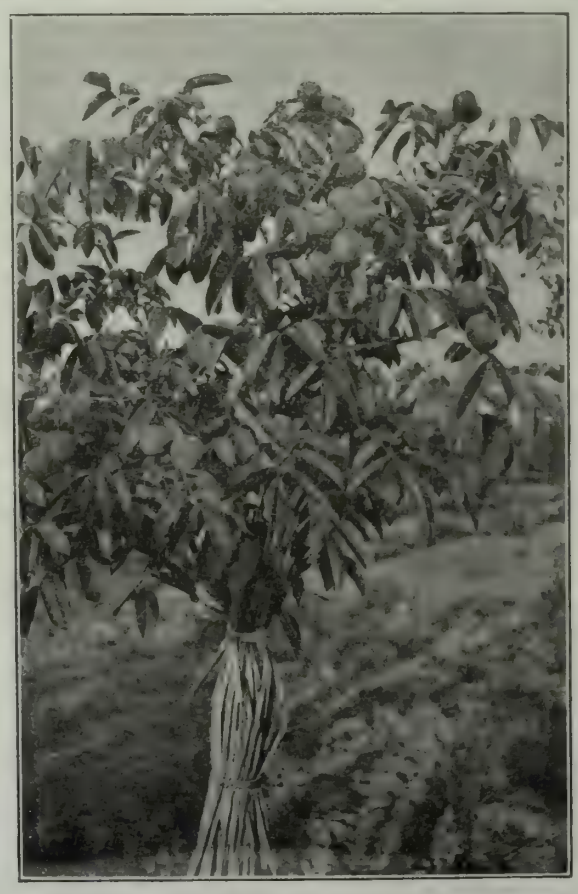
Write for 120-Page Catalog

Lists all profitable varieties—prices in plain figures. Delicious, Jonathan, Stayman Winesap, all worth-while apple trees. J. H. Hale and other peaches, apricots, plums, cherries, pears, quinces, grapes, blackberries, raspberries, currants, gooseberries, roses, shrubs, ornamentals, etc. Write for it today.

We ship direct to California customers. Our trees pass all requirements of inspection laws. Safe delivery guaranteed.

William P. Stark Nurseries

Sta. S-23 (38) **Stark City, Missouri**



Willson's Wonder Walnut Tree

Planted 2 years ago last Spring. Second Heavy Crop of Nuts.

Originated, Propagated and for sale by

F. C. WILLSON, Encinal Nurseries SUNNYVALE, CAL.

Also Genuine Franquette Grafted on Cal. Black Root.

EUCALYPTUS

We have our usual stock of high-grade, well-matured trees, and invite correspondence with intending planters.

W. A. T. STRATTON, Petaluma, Cal.

ator W. E. Brown, Los Angeles. The Commission will make a study of rural problems. The first meeting will be held December 20.

Father Ricard of the University of Santa Clara has issued his weather forecast for December, stating that it will be a wet month, with lots of snow falling in the mountains.

Irrigation Matters.

A congress has been called in San Francisco for January 15 on the work of developing the inland waterways of California.

The directors of the Imperial Irrigation district have offered to buy the rights of the Southern Pacific and the California Development Co. in the canals of the latter, subject to approval of voters in the district.

Work on the formation of a district in Fresno county and vicinity to take in 117,000 acres, most of which is now under irrigation, has been begun. Local meetings regarding the subject will be held December 20.

An election is to be held in the South San Joaquin Irrigation district to permit directors to sell bonds for less than par value.

A ruling from Washington is to the effect that owners of irrigation district bonds will have to pay an income tax on same.

General Farming.

The potato crop of the delta is well below average this year, and many Oregon and Nevada potatoes are being shipped into California, a few cars being condemned for containing eel worm and tuber moth. A big rise in potato prices is hardly expected.

Allen Peterson, of Sonoma county, has contracted to supply 20,000 pounds of hops in 1914 at 17 cents.

The Orange County Celery Growers' Association began shipping about December 6. The quality of the celery is reported excellent.

The Tagus ranch, near Tulare, is having 1500 acres seeded to barley.

Various Items.

A considerable decrease in parcel post rates is announced for January 1, showing that we are getting better service as the postoffice has more experience in this line of work.

Correspondence courses in agriculture through the University of California are so popular that 1085 students had enrolled up to a recent date.

The fifth annual Farmers' Congress of Colorado is to convene at Fort Collins on January 15, 1914.

At the Napa Egg Laying Contest, Pearson's Buff Wyandottes still lead, and as a rule the heavy breeds are doing better just now than the light breeds.

The Fresno Nursery Co.

F. H. WILSON, Pres. CHAS. A. CHAMBERS, Sec.

LEADING GROWERS OF GUARANTEED

NURSERY STOCK

"From the Roots Up"

APPLE, APRICOT, PEACH, PEAR

TREES

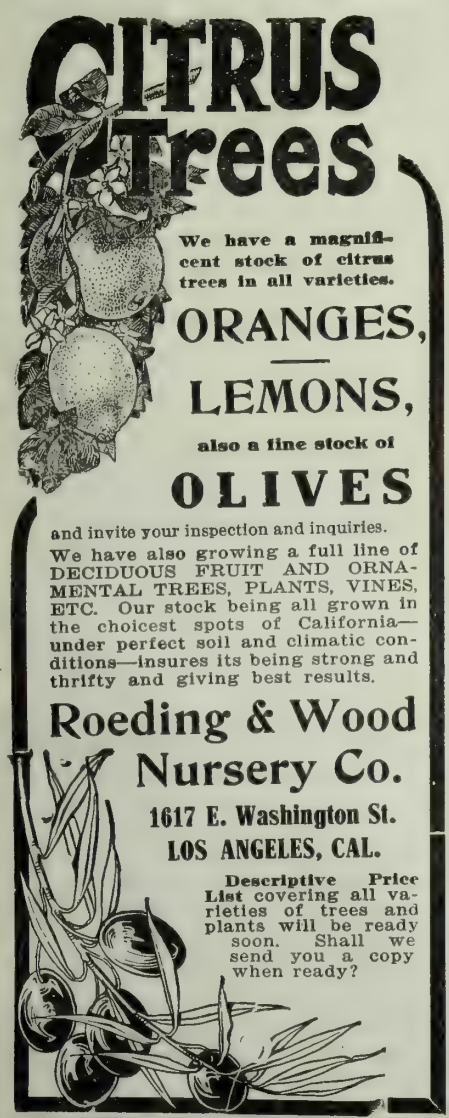
GRAPE VINES, ORANGE, LEMON

TREES

Price list and information free. Write us your wants. Address our firm at

P. O. Box M 615, FRESNO, CAL.

Our High Quality Nursery Stock made Fresno Famous.



CITRUS Trees

We have a magnificent stock of citrus trees in all varieties.

ORANGES,

LEMONS,

also a fine stock of

OLIVES

and invite your inspection and inquiries.

We have also growing a full line of DECIDUOUS FRUIT AND ORNAMENTAL TREES, PLANTS, VINES, ETC. Our stock being all grown in the choicest spots of California—under perfect soil and climatic conditions—insures its being strong and thrifty and giving best results.

Roeding & Wood Nursery Co.

1617 E. Washington St.

LOS ANGELES, CAL.

Descriptive Price List covering all varieties of trees and plants will be ready soon. Shall we send you a copy when ready?

Ignorance Means Loss

There are certain thieves which are stealing your profits.

You can't tell just exactly how much you are losing, because it is done so quietly and carefully that you perhaps cannot perceive a difference.

One season's production of your orchard will tell you just exactly what you have lost in former years.

Various insects and fungus diseases are thieves in every sense of the word.

And these should have special attention to kill them.

We Manufacture "ORCHARD BRAND" Spray Materials.

Special mixtures for specific insect and fungous troubles. Arsenate of Lead, standard, paste and powder for killing codling moth and chewing insects. Arsenate of Lead, Tri-Plumbic, paste, specially designed for use in humid, foggy sections of the West. Arsenate of Zinc, powder, for killing chewing insects on truck crops. Lime-Sulphur Solution, for use on fruit trees during dormant period. Atomic Sulphur, fungicide, for use on Peach trees to control brown rot; on Apple trees to control mildew, leaf-spots, cedar rust and scab—also for red spiders and mites. Bordeaux mixture, paste, fungicide for general use on plants; for celery blight, peach blight, etc. Soluble Oil and Oil Emulsion, for dormant treatment of fruit trees and for pear thrips, aphis, etc.

Mr. S. W. Foster, the former entomologist of the United States Department of Agriculture, is glad to give you free information about these problems. He will be glad to answer any question that you would like to ask.

You need special directions because of the different climate and different soil conditions. There is a different problem for every orchardist.

Special directions are given whenever they are asked for.

Send for special information. Don't put this off, because it is necessary to have this at once if you wish to get the most out of your orchard next spring.

You will be surprised at the knowledge you will get and the information which will prove of benefit to you.

This information means dollars and cents to you. Send today.

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Royal Insurance Building, San Francisco.

SPRAY CHEMICALS

We manufacture the famous **Ortho Sprays.** Ortho Lime Sulphur is the safest, surest, strongest spray on the market.

SPRAY PUMP SUPPLIES

We can save you money on supplies. Write us.

California Spray Chemical Co.

WATSONVILLE, CAL.

Prompt shipment, our motto.

Universal Orchard Sprays

UNIVERSAL ORCHARD SPRAY

More mistakes are made in buying orchard sprays than in almost any other line of agricultural work. **Always** consult a specialist **who knows what to recommend** for each particular insect or fungus. Our entomologist, PAUL R. JONES, is at your service **free.** His experience with the United States Dept. of Agriculture for many years places him in a position to give you **absolutely correct advice.** We handle the most complete line of Insecticides in the U. S. Among the products we manufacture and distribute are

YEL-ROS	DISTILLATE OIL EMULSION
23° CRUDE OIL	CRUDE OIL EMULSION
CRUDE OIL EMULSIFIER	LIME SULPHUR SOLUTION

Kerosene Emulsion; Miscible Oil No. 1; Miscible Oil No. 2; Miscible Oil No 3; Sheep Dip; Liquid Whale Oil Soap; Whale Oil Soap (hard); Cresol Soap; 32°-34° Distillate Oil; Black Leaf 40; Arsenate of Lead; Bordeaux Mixture; Atomic Sulphur.

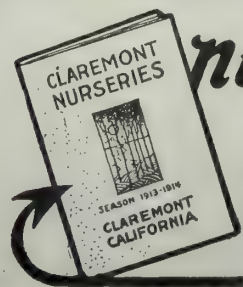
Booklets Sent Explaining Use of Each Product.

Our New 1914 Spraying Calendar is Now Ready—Free

BALFOUR, GUTHRIE & CO. (Insecticide Dept.)

350 CALIFORNIA ST., SAN FRANCISCO

Park and Oak Sts., Portland, Ore. 826 Higgins Bldg., Los Angeles, Cal.



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MISSION AND MANZANILLO OLIVES.

Trees, Plants, Shrubs, Roses, etc. We have the finest Ornamental Stock in California. Our packing and shipping facilities are unsurpassed. If you anticipate planting Apples, Roses or any other stock, **write for our beautiful 1913-14 Nursery Catalog,** which is full of fine illustrations and of interest to every planter.

CLAREMONT NURSERIES, INC.,

1200-1300 Indian Hill Blvd., Claremont, Cal.

Slaughtering on the Farm.

[By the Associate Editor.]

Where it is required, possibly no other one thing gives so much chance of saving a big slice of middleman's profits as slaughtering calves and hogs on the farm or dairy and selling veal and pork to the butcher rather than live animals to the stock buyer. The pork and veal reaches the same place, whatever method is used, only in one case it goes direct and with little bother to producer or retailer, and in the other case there are several hands to go through and each takes a big toll.

Of course, some sections are better situated to get full returns for live stock than others, but on the other hand occasionally direct dealing is very profitable. A. T. Van Slyke, a dairyman of Ripon, has found that slaughtering on the ranch and selling to Stockton butchers is very much better financially than selling live calves and hogs through the regular channels.

It was easy for him to start this, for he came from western New York, where the regular thing is for farmers to do their own slaughtering, and every farmer knows how to kill and dress an animal properly. He has a dairy near town with grade Holsteins largely predominating, and when his first calves were ready for the butcher he asked what he could get for them. The best price was nine dollars, so he tried to see what he could get in Stockton, and found that he could sell them for fourteen dollars dressed. The margin of profit has averaged about as well ever since.

There has been very little trouble in finding a market, either, as the butchers are as glad to be able to buy healthy, well fed calves as he is to sell them. One of the first experiences, however, was a little rocky. He had a bunch of calves and was told by a certain butcher that if they were up to farm standard and delivered on such and such a date, he would pay 10 cents a pound, dressed weight. When they were delivered the butcher evidently had a fair supply of veal on hand, or figured that they were killed and had to be sold, so he could get them for a less price, and said that they were not up to standard and could only pay 9 or 9½ cents. Mr. Van Slyke went to another butcher, who said that he would pay 10 cents if they were all right, and thought that they were all right, too, when he saw them, so the first butcher lost a good customer and Mr. Van Slyke got his price. Since then there has been a ready market for all the calves and hogs turned off, and no trouble in prices or selling.

In such dealing the buyer frequently has as much to complain of the farmer as the farmer has of the dealer, for the dealer is a business man and knows what good business is, while some farmers who do very little selling, and every deal they make think that the other fellow is going to try to beat them, try to do the same thing. In any business like this, the producer has to supply goods strictly up to agreement in quality, time of delivery, and otherwise.

Mr. Van Slyke goes into Stockton frequently on business anyway, but claims that if he could not do so he could sell just the same way, shipping by express for 200 miles. He takes the meat in on a spring wagon which he uses to deliver milk in Ripon. For the latter work, only one horse is used, but for a Stockton trip two are put on. In one trip he has made as much as $25, as compared with what he would get by selling live animals locally.

The slaughtering is simple and easily learned. Of course, he knew how it was done by New York experience, but any handy farmer could learn as well in a short time, though the only way to learn would be to assist in a few killings. The day the writer dropped around, three calves and three hogs were killed and dressed in one afternoon by Mr. Van Slyke and his son, who is of high school age, starting at about half past one and finishing up about milking time, or possibly a little later than milking should have started. It was done with no equipment beyond that hastily fixed up, and with simple but sufficient equipment eight animals could have been dressed in the same time. Thus one day's labor pays for killing and dressing eight animals.

The offal is used for hog and chicken feed. It is hard to say just what the value of this is. Mr. Van Slyke does not value it very highly, but even as fertilizer it is worth a good deal and should be still more valuable as hog and chicken feed. In reality, it would probably be fair to say that the offal will pay for the labor of killing, or even more than that, leaving the advance in price clear gain.

The calves are sold at about six to eight or ten weeks old, and usually dress about 160 pounds. The cost of feed during this time Mr. Van Slyke figures as $3.00, labor being extra. The first milk it not counted, as it could not be sold, though it might be used for chicken or hog feed. For ten days whole milk is fed, then half whole milk and half skim-milk, and the latter part of the time a pound of middlings and skim-milk is given. This brings the calves along in fine flesh and condition. At this rate a person could afford to veal his Jersey calves, which would dress only about 90 pounds, say, against 160 pounds for a Holstein at the same age, even though the Jersey meat might sell for a little less per pound.

Not only is there a saving of middleman's profits by this process, but there is a gain otherwise. The calves are kept and killed in natural surroundings and dress full weight, the meat being in fine condition. Taken away from the farm, crowded together, jerked around on the cars and subject to both physical and mental discomfort, with lack of feed, or at least of appetite if they have the feed, they lose in weight and quality of flesh. Thus there is more veal and better veal when the butcher gets the carcass, provided the farmer knows his business, and more money to be distributed as well as fewer people to divide it with.

This killing and selling direct has not become at all common in California, but it has almost every place else after they have gotten over the stress of development work. The numerous advantages of it make it a thing that is highly desirable in many instances, though where there are recognized channels of selling live calves and hogs and one can get good value, home slaughtering may not be necessary or profitable. As a rule the more dairying done, the less satisfactory home killing is and the fewer calves and hogs raised in a district, the harder to get a good price for them, unless they are so very scarce that the local butcher always wants them, and the better profits in getting a direct market. In California we are elated over the benefits of co-operative marketing, but simpler methods for the individual alone often give better results for the individual than co-operative marketing itself could give.

COW-TESTING REPORT.

The report of the Stanislaus County Cow Testing Association just issued by F. E. Falor, for the month of November, shows that the cows entered are of a much higher quality than one usually finds in the majority of grade herds in this State.

Below is given the records of the 20 highest producing cows which have an average of 58.7 pounds of fat.

Owner's name.	Breed.	Milk.	Test.	Fat.
H. E. Tong	Holstein	1485	5.7	84.6
Ira Heffelman	Jersey	1344	6.0	81.0
W. C. Lollick	Jersey	1395	5.6	78.0
W. E. Tong	Durham	1230	5.7	70.0
W. L. Bowen	Jersey	1338	4.9	65.7
Edwards & Tibbetts	Durham	1629	3.9	63.6
H. E. Cornwell	Holstein	1803	3.4	61.8
Schmidt Bros	Jersey	1341	4.5	60.3
H. Jacobson	Holstein	1158	5.2	60.0
H. E. Cornwell	Jersey	927	6.5	60.0
J. W. Scott	Jersey	1041	5.4	56.1
H. E. Tong	Holstein	1392	3.9	54.3
Blake Vent	Jersey	804	6.2	50.4
W. E. Tong	Hol. 1-2 Dur.	1062	4.7	49.8
Blake Vent	Jersey	1002	4.8	48.0
W. E. Tong	Durham	1182	4.0	47.4
C. H. Rhode & Son	Holstein	957	4.9	46.8
J. A. Henry	Jersey	909	5.1	46.5
C. D. Bracewell	Jersey	1020	4.5	45.9
J. A. Henry	Jersey	957	4.7	45.0

It is not hard to see from this that the quality of the stock kept by these owners is the right kind for profitable dairy undertakings, and this as well as other such associations should receive the support of every dairyman who is endeavoring to get the most from his investment.

A RANGE AND ALFALFA CATTLE RANCH.

[Written for the Pacific Rural Press by J. C. Loomis.]

With the dairy cow and the hog almost pre-eminent in alfalfa regions, the average person has neglected to consider that the beef cow also has a place on the alfalfa ranch, providing that the one difficulty, range feed for the growing stock, can be secured.

Very likely the time is not far distant when cattle will play a very important part in relieving the hay markets of the State, but at present the only activity seen among cattlemen on alfalfa lands is where the owner is fortunate enough to have a good mountain range close to or adjacent to alfalfa land.

One of the finest ranches of this kind in the State is the one owned by the Simon Newman Company, near Newman, Stanislaus county, for it not only has 3000 acres of valley land which is gradually being planted to alfalfa, but also owns 75,000 acres of range land in the Coast Range mountains, which, adjoining the valley land as it does, makes an ideal stock ranch.

At the start it should be said that without the range the undertaking would not be so successful, and the same is true of the alfalfa, for the stock could not be profitably grown on alfalfa alone, and without it the practice of selling grass-finished steers would be the outcome, the same as it is on most of our present mountain ranches.

For a great many years the valley land was mostly farmed to grain, as there was only a small portion of it that was under the irrigation ditches, but during the past few years it has been found that water could be developed in good quantities by the use of pumping plants, and as a result electrically-driven pumps have been installed, which insure plenty of water for alfalfa irrigation.

Other than during the winter months, the only stock which is being kept on this valley land is the herd of pure-bred Herefords, which is at the present time the largest herd of that breed in the State. There are 200 head of the registered stock, the herd being headed by the bull Young Donald, 315532. The foundation for the herd was purchased from J. Marzen, of Lovelock, Nevada, about three years ago, and it is the intention of the owners to improve the herd as fast as possible from this time forward, with better blood which will be brought out from the East.

Although the registered herd is run separately from the range stuff, it is the intention to eventually build up the range stock so that it will all be highly bred, and, in line with this thought, the stock which were formerly fairly well bred Short-horns, have for the last three years been bred to pure-bred bulls out of the registered herd.

As there are 3000 head of range cattle, it will be seen that the work of breeding up the herd is being done more cheaply than if the sires were bought on the outside, but it should also be said that with the increasing demand for pure-bred sires the owners consider that the registered herd would be a very profitable feature without their other holdings.

As before mentioned, the only time that the range stock is taken down to the valley land is when the finishing season is on, which usually starts about November 1.

It is at this time that the value of the alfalfa is most noticeable in connection with the range, for by finishing them on a ration with it as a base, the extra cost of such feeding is more than made up by the extra price received for the finished stuff.

Instead of feeding the alfalfa in the shape of hay, it is first cured and then hauled up to the feed lots, where it is run through a feed-cutter and put into the stack in that shape. This is done as it eliminates a great deal of waste in feeding and also a waste in storing space which will be greater when the time comes for storing it in barns.

There is also another reason for chopping the alfalfa, and that is that it is fed in connection with molasses, which could not be easily mixed with hay. This is a comparatively new feed to California stockmen, as it is a by-product of the sugar factories and has so far only been obtainable in limited quantities, as most of it was contracted for by concerns that turn out alfalfa

(Continued on Page 566.)

Stock Development in Siskiyou.

To the Editor: After five years delay the government is likely to commence work on a new project, and our own State of California is to be honored with the initial work.

The interior department have expressed their willingness to co-operate with the people in Shasta valley, and install a large system to irrigate 150,000 acres of rich volcanic ash land, and work on this project will be commenced the coming summer, and will be pushed through to completion as fast as money and men can do the work.

Shasta valley is located in Siskiyou county, California, and is a district about thirty miles long and from five to fifteen miles wide, and extends from Hornbrook to Edgewood, and is paralleled by the S. P. R. R., and, by the way, the way this road owns some 20,000 acres of the best land here, and it will now possibly go into new hands, and will stand a chance to be improved, for up to this time it has a wild and woolly appearance with shabby fences and a broken down look due to many long years of neglect.

As you pass through this country on the train you do not form a very good impression of the country, this is due to the dry lands being close to the railroad line, and for about two miles on either side it is mostly unimproved, but when we go back a distance from the road new houses and fine farms rise up in all directions, and as we approach the hills it seems that every flat canyon and little valley has an irrigated farm, and the owners are very prosperous and thrifty and their money is made chiefly from dairying and raising fine beef cattle.

I should judge that nearly 20,000 acres of land in various parts of the district are under irrigation, and they get the water from innumerable streams that flow down the mountain side, and it runs at the same rate both summer and winter, hence the farmer has an abundance for all purposes, and a majority of these places have been improved and farmed for the last thirty years.

Local people have during the past summer installed a power plant service, to pump water on about 12,000 acres of land and this is being cut up into small farms of 20 to 100 acres and sold to people who are coming from all parts of the country.

It is the least known and least written about place on the Pacific Coast, and who in all the world has ever read or heard of Shasta valley, and how many of your readers know that it is the best and largest beef cattle producing country on the Coast and, is in the very front rank as a dairy country, and if Uncle Sam comes in here, it will be his tribute to the dairy and to butter and cream, for with 100,000 acres under irrigation it will bring here 40,000 people and, Holsteins, Jerseys and Guernseys will rule this country.

In driving over this valley for the last two days I have seen more cattle than ever came under my observation, in any two months of my life, and I have been over Texas, Colorado and Montana more than 20 different times, and can state from personal observation that at least Texas has vast herds of beef cattle, but they are scattered over so much country that it would take weeks to get a view of only a small part of them.

Large creameries are located at Edgewood and at Montague, and they handle immense quantities of cream, and their butter is gilt edged, and is among the best selling product in the west.

I met cattle buyers here from Spokane and Seattle, and one man was from San Diego, and he came here with his long goad or pole ready to take charge of the two cars of fat steers that he told me he wanted, and he also assured me that they paid a higher price for these beef cattle here in Siskiyou county, than was paid by his firm for cattle in any other part of the West, he declared that this was due to the steers being fed on the tender meadow grass and alfalfa, which grows on this higher altitude, for this country is 2500 feet above the level of the sea.

Yesterday I was sidetracked on the road for more than one half hour to let pass a drove of 4000 seven-month-old lambs on their way to Montague where they were put on cars and shipped to the San Francisco market, and if any section of the West has or had a drove of marketable lambs to surpass this legion of tender chop-producers I would like to see them.

But what strikes me as of most importance is the myriads of cattle, cattle on a thousand hills, cattle in every valley, and when we ascend a hill and get our first view of the country beyond, it reveals to us vast flocks of sheep or of big herds of cattle, mostly the latter, for as a rule the sheep are kept in the foothills.

East Shasta or what is known here as little Shasta valley is under a high state of improvement, and its farms will rank up with the best farms in our Golden State, and as producers and money-makers are way ahead of the ordinary lands districts over the coast.

No one wants to leave the country, and if a farmer sells his land he will buy another farm here and still remain in this country, this looks good to me and shows that lands and water and soil is good to the people, and yields to them an abundance of its riches.

On November the 19th, Congressmen Raker and McKinlay both spoke here to the people at a mass meeting that was called to discuss the plan of Uncle Sam taking a hand in this enterprise, and after the people heard what they had to say, they were aroused to great enthusiasm, and by the joint work of the people, and the Reclamation Service they will install a plant here that will cost about four million dollars, and in the end will add twenty million dollars to the assessable property of this county.

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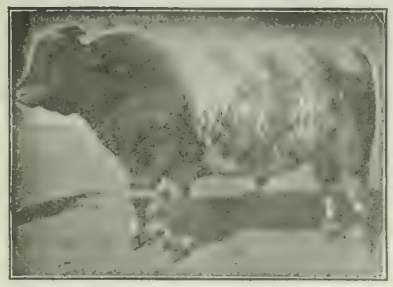

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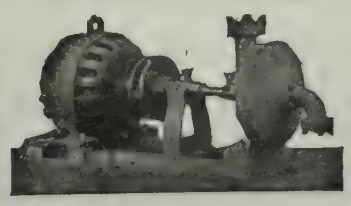

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Another Dissatisfied Horse Breeder.

To the Editor: I notice your article and the Wheatley and Bond letters in the RURAL PRESS regarding the "Draft Horse Society." I am ready to help what little I can in the good cause. I breed Percherons.—R. J. Ross, Modesto.

This communication further shows that a draft horse breeder's organization is needed at this time, as it indicates that everyone who breeds horses, whether on a large or small scale, will support such an organization.

So far the principal reasons given for such an association have dealt chiefly on overcoming unsatisfactory conditions at the State Fair, and of insuring the farmer that all stallions with a certified license are sound in all respects, but there is little doubt but that there are many other features which could be successfully taken up that would materially advance the horse breeding business in this State.

A subject in mind that is at the present time demanding a great deal of attention is the auto truck and its influence upon the heavy horse business.

By having an association, as before outlined, comprehensive data could be secured as to the true relative value of the horse and truck and with such data at hand the arguments favoring more and better horse breeding would be so forcible that every farmer in the State would endeavor to breed only to the best sires, instead of losing all interest in horse breeding as a great many are today doing.

If, on the other hand, such data should prove beyond a doubt that our horse of today is unsuited to compete with mechanical power, steps could be taken to introduce the right kind of an animal for that competition.

As we have asserted in these columns before, the possibilities of horse breeding in this State are more favorable, climatically, than in any other State in the Union, but before much can be done in a larger way, we must wipe out the old belief that California is the dumping ground of the country for scrub stallions.

During the past week we have talked with a man who has spent thousands of dollars in establishing a stud farm in this State during the past few years, and he stated that it was one of the most discouraging tasks that he had ever encountered, due to the fact that the horse with real merit did not receive any more consideration than the scrub even in the show ring where the unsound horse should above all places be excluded.

Very likely Mr. Ross' letter is an example of what a good many breeders are thinking who have so far neglected to send in their names. Only a few more willing workers are needed to make the undertaking a success. Who will be the next?

A RANGE AND ALFALFA CATTLE RANCH.

(Continued From Page 564.)

meal and molasses already mixed, but so far the owners of this ranch have been able to secure all of it that they required at reasonable rates.

The molasses is bought in carload lots and hauled to large underground cement tanks which are located near the feeding pens. In the past the mixing has been done in a large open cement vat, where the alfalfa is dumped upon the floor and the molasses is poured over it after having been diluted with two bucketfuls of water to one of molasses. As this method involves a great deal of expense in the labor, a machine for mixing the feed will be installed for that purpose.

Feeding pens have been built across the road from the mixing vats, where feed troughs are used for holding the feed.

The gains on this ration have been found to be as satisfactory as where grain and alfalfa are fed, as much as three pounds gain a day having been secured on this place at times, and the cost is a great deal less. As no systematic experiments have been carried out, it is not known positively the actual value of a gallon of the molasses, but some idea of its economy may be seen from the fact that it takes about a pint of the undiluted kind to six pounds of alfalfa, and that the cost of the molasses is about 11 or 12 cents per gallon.

Just how valuable the molasses will be to stockmen in the future is hard to say, as we understand that the supply is already pretty well taken up by the demand.

In some respects the operations of this ranch should be of value to the future beef cattle business in this State, as it brings out new ideas as to how the alfalfa grower can successfully market his crop through the beef animal, a subject which is at the present time considered of much importance to all cattle and alfalfa growers.

As may be seen from the above, this company is making the alfalfa pay from beef finishing, but it has found that to be successful it must have a higher grade animal than the nondescript which has for such a long time prevailed on most of our ranges; so the first thing for those cattlemen who contemplate alfalfa feeding to do is to build up their herds with pure-bred bulls.

Over 60,000 tons of alfalfa has been stacked in the Lovelock section of Nevada this year, which will be fed out to beef cattle and sheep.

During November the Nevada Land Office received applications for 1648.40 acres of land.

A Los Angeles company has purchased 45,000 acres of land in northern Imperial county.

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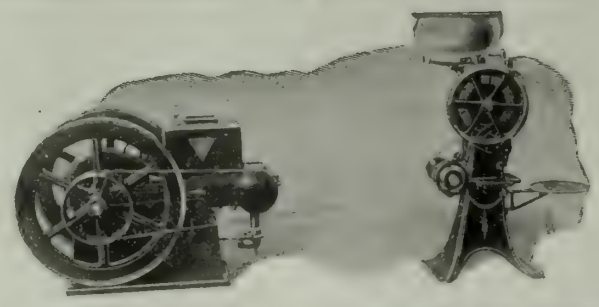

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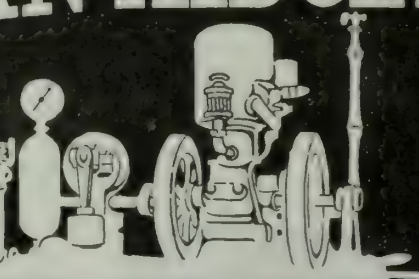

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With the Live Stock Men.

According to reports from Newman, Stanislaus county, the parties who have been contemplating the erection of a condensed milk plant at that place have definitely decided that the plant will be built in the near future.

A good many horses have recently died on a number of ranches in the Livermore valley from some unknown cause. Old farmers in that section state that it is caused by improper handling of the stock.

A shipment of 1000 tons of Argentine beef was received at New York last week. Just what effect these shipments will have on the American beef is hard to foresee, but it is thought that it will influence prices a good deal.

A number of Humboldt county dairymen who have purchased land near Kerman, Fresno county, have shipped 150 head of dairy cows into that place during the past week.

It is reported that a number of hogs are dying near Bodega, Sonoma county, from rabies, having been given the disease by a dog that recently invaded the district.

T. J. Gilkerson, of Stratford, Kings county, sold one of his prize-winning Holstein calves to R. A. Hall, of Riverdale, last week.

Since the Chico Civic Center made their report on dairies in that section that supply milk to the city trade, the milkmen have raised the price of milk to $3 per quart per month, claiming that they must have more money for the extra expense of production.

A petition has been sent to Governor Johnson that carried a large number of signatures of dairymen who patronize the University Farm creamery. It was in the nature of a protest against letting out E. H. Hagemann as creamery man and also calls for an investigation of conditions on the Farm.

J. D. Green, manager of the Sanitary Dairy at Visalia, purchased the Linwood dairy at Visalia last week and will consolidate the two.

Sixty-one head of grade and registered Holstein cattle were shipped from Modesto to Eugene, Oregon, last week, by F. P. Allen, who will stock his ranch with them at the latter named place.

At the annual meeting of the stockholders of the Woodland creamery, last week, it was decided to urge the establishing of a dairymen's association in Yolo county and also the formation of a cow-testing association. The officers of the creamery reported that nearly $100,000 was paid out to dairymen last year by the company.

Among those who purchased stock at the R. C. Davis sale of Holstein cattle at Granger, Washington, was Frank Hatch, of Modesto, who shipped home a carload last week.

A plan is on foot to establish a creamery near Chico by local people in that section, and it is probable that an organization will be started with that end in view in the near future.

Barges brothers, of Startford, Kings county, purchased a carload of Holstein cattle last week in the Kerman district of Fresno county. It is said that they paid an average price of $120 per head.

Advices from Tulare county state that the fear of anthrax among the dairy cattle of that district is without foundation as authorities who have examined the dead animals state that they were in no way affected with the dreaded disease.

S. G. Sparks and W. T. Hevel, of Fallon, Nevada, recently shipped 70 head of dairy cattle from Visalia to their ranches in the island district near Fallon.

The Heber Co-operative Creamery Co. of Imperial county, which has been in operation four months, is now producing 3000 lbs. of butter per day. It is conservatively estimated that the entire valley is turning out about 17,000 lbs. per day.

John Daggs, the well known Duroc-Jersey hog breeder of Modesto, reports that he has recently received a new boar and two new sows from Colorado which will be used in further building up his herd of Reds.

Glencarnock Victor 2nd was grand champion in the steer class at the International at Chicago last week. He is owned by J. D. McGregor, Brandon, Manitoba, Canada.

Due to the coming Pacific International Livestock Show, cattle sales at the Portland Union Stock Yards were light, and the demand for prime heavy steers was strong. Steers ranged in prices from $7 to $8. Butcher cattle supply was limited, cows going at $6.50, heifers at $6.75, bulls at $5.50, and stags at $6.50. The hog market was some stronger with prices for prime light stuff at $8 in bulk, sales being about 25 to 30% less than for the previous week. The condition of the sheep market was very little changed, with prices for fancy yearlings at $5 and extreme prices of $6.50 for lambs.

F. A. Lucas and John P. Lucas recently purchased the McIntyre ranch, near Glenn, and will conduct it in the future as a dairy ranch.

A report states that entries are pouring in for the Fat Stock Show at Portland. Stock from all sections of the Pacific Coast is entered. Special stock entered for premiums will approximate 3000 head. Preparations have been made to handle the largest crowd in the history of the Pacific International Livestock Show.

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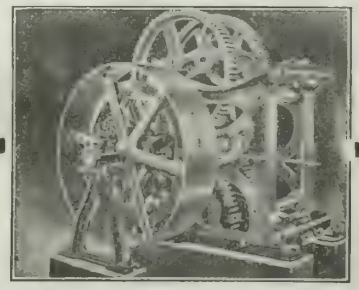

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Electric Power in the Dairy.

[Written for the PACIFIC RURAL PRESS.]

As the years pass we find great changes in all things. These changes have come about by the introduction of new methods that are better and more economical than the old.

Electricity has been directly responsible for a great portion of these changes. Edison made his first incandescent lamp in 1879, and in the thirty-five years that have elapsed since that time, we find all the sciences making rapid strides. You ask: "Why has it been so rapid?" The answer lies in the fact that this power, heat and light, all from the same source, is economical, safe and clean. These three reasons make it an ideal power for use in the dairy.

Let us walk over to the Electric Dairy across the valley. It is milking time when you arrive, and on entering the stables your hat is almost taken off by the gust of air that comes out of the door. Yes, electric ventilating fans force fresh air into the stables so that the air is completely changed every five minutes. You see a herd of fifty cows being cleaned preparatory to milking; but how are they doing it? The men seem to do it so well and so fast. An electric motor drives the vacuum pump that creates a vacuum through pipes in the stables. The cleaner operates like a carpet cleaner delivering the dust through tubes into cans, allowing none of the dirt to settle on the cows or in the stable. This system might be compared to hand cleaning like the carpet cleaners are compared to the dusty broom method. The milking machines are then brought out and attached to the same vacuum pipe line. Two men with four machines do the work. You become interested and in a short time they announce the milking finished. Just one half hour to do the job.

Perhaps you would like to know how much it would cost them? Labor and power included, the cost of one milking amounts to 22c. or less than one half cent per cow. The man tells you that previous to the installation of milking machines he employed four men, and it would cost from 80c. to $1 to do the milking. Here was a saving of 60c. per milking or $438 per year. You follow the milk to the dairy house.

The separator with a small 1/6 hp. motor stands on the floor. The motor is mounted on the same base as the separator. A cord leads from the motor to a lamp socket and by turning the snap-switch, the separator gradually gains its full speed. They run through 500 lbs. of milk, and again you ask: "What has it cost them to do this work?" They could separate three times the amount for one cent. Then you wonder why men will turn the separator by hand.

When the separating is done the cream is taken to the cold storage room; a motor drives the ammonia pump and by means of an automatic switch, the temperature of the room is held constant. You do not notice the dampness generally caused by ice storage or the dirt that accumulates in handling ice. The pump has been running intermittently for days and has been almost forgotten, it needs so little attention.

Churning day comes round. The churn is uncovered and we find a 2 hp. motor attached directly to the churn. After the cream is in, the switch is thrown down and you do no more until the butter shows on the glass. If the butter worker is combined with the churn, the same little motor takes the work from those arms that used to ache while working the butter. The cost of power to churn 100 lbs. of butter amounted to 2 cents.

This little visit has opened your eyes to the possibilities of electric power. It is too clean, handy and cheap to be without, so you go home with the fixed determination to take the step yourself.

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Since hog cholera is the greatest problem before the California hog raiser, the man that takes the best care to prevent the introduction of the disease, should come out the best. These are the rules that should be followed to keep the disease out of the herd, according to the State Sanitary Board of Minnesota.

Do not visit your neighbors' hog pens or enclosures, nor allow any unauthorized person to go into your own hog pens or enclosures.

Keep your dog tied.

Confine your hogs to small dry pens or enclosures.

Disinfect the troughs daily with 5 per cent solution of carbolic acid.

Hogs sold for breeding purposes should be crated and expressed, and not allowed in any stockyard. The law explicitly states that no hog may be taken from a stockyard except for immediate slaughter.

Hogs recently purchased for breeding purposes should be kept isolated for at least two weeks before being placed with other hogs.

Do not think your hogs are immune from this disease. Every effort should be made to follow out the above instructions, as they are for your benefit.

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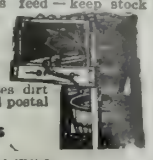

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The Value of a Dairy Cow.

[Written for the PACIFIC RURAL PRESS.]

A good many of our alfalfa growers seem to be undecided at the present time as to just what to do in the future with their crop. The high hay prices, the past season, have led a great many to believe that they could realize better returns through the sale of hay direct than they could through the more indirect way of selling through the cream check and as a result the number of dairy cows compared to the alfalfa acreage is perhaps less than it has been for several years in this State.

A noticeable feature of this year's selling in all dairy sections was that the man who has, through careful selection in the past, built up his herd to a high average production did not have to dispose of his cows in order to realize a profit from his hay, but quite to the contrary, was able to get more from it through the well bred cow than his less fortunate neighbor with his scrub stock.

In some respects the past year will no doubt prove to be one of the best teachers of the value of good dairy cows that we have had for some time, as heretofore many have only thought of the dairy cow as a medium of temporary relief from low priced hay, fully expecting to discard her as soon as prices went up.

Without doubt the practice of selling or buying dairy cattle according to the hay market is not conducive to the highest possible returns, as the task of building up a herd of high producers is one that demands considerable time and also a great deal of study.

Results show that the only accurate way of accomplishing the work is through the use of the Babcock tester and the scales, for it is in this way that the cow will soon demonstrate whether she is capable of returning a profit from ten dollar hay or not.

At one time it was thought that there was some mysterious thing about the profit side of dairying which could only be told by an authority on the subject, but through the tester and scales it has become an easy task for every dairyman and after the production has been figured in that way it is not hard to tell about what the cow is worth.

For instance we are told that a certain cow gives 150 pounds of fat in a year and are asked whether she will be profitable or not. Considering that it ordinarily cost that much to feed her when fat is figured at 30 cents a pound it will be seen that she just about breaks even, but does not really earn her owner any money.

This is figured on the assumption that the skim milk, manure and calf will pay for the cost of milking, depreciation and interest, so it will be seen that from a purely commercial standpoint such cows are worth very little.

From the following figures it may be seen that the profit from a cow depends upon the cost of producing a pound of fat and that the more she produces the lower the cost will be.

In preparing the following table the feed cost of the 150 pound cow was estimated at $45, with an estimated increase of 30 per cent in the cost for any increased production over that amount. Fat is figured at 30c a pound, which is very likely somewhat less than the average price the past year. The 150 pound cow is used as a base for the other figures.

Production Pounds	Feed Cost	Feed Cost per Lb. cents	Net Returns
150	$45.00	30	———
200	49.50	24.7	$10.50
250	54.00	21.6	21.00
300	58.50	19.5	31.50
350	63.00	18	42.00

Naturally such figures are only general and may vary according to different conditions, but they serve to at least show how one may figure his profits providing that he is feeding alfalfa hay at average prices and knows what his production per cow amounts to.

If dairying is to be done on strictly business methods the same as any other undertaking would be where an equal amount of capital was invested, one should have some idea of the value of his cows and when one has similar figures to those above it is very easy for anyone to tell about what amount his cows will pay interest on after the depreciation has been deducted, for cows like everything else do give out in time, and that should be charged up to them.

Unlike most machines, however, the depreciation in a dairy cow is not so great, as after she has arrived at the stage where she is no longer profitable for butter production she can be disposed of for beef. True she does not bring as much as the beef type animal or as much as she was formerly worth as a dairy cow, but with present meat prices the depreciation charges are not very large.

To get back to the question of what to do with next year's hay crop providing the weather prophets are on the right side of the fence, there is little doubt but that anyone who bases his cows' values upon actual profit and loss values like the above will never get nervous when hay prices soar.

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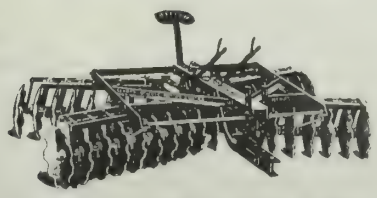

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By J. H. Barber.

A THIRD WAY.

The third method of plowing strip-checked land is to plow the field in the contrary direction parallel with the ditches and at right angles to the levees. Dont be afraid of damaging the levees, but plow right through them, simply being careful to keep the plow at the same depth all the time. Done with care, this method of plowing does not affect the height of the levees or disturb the cross-level of the checks. The dead furrows and ridges are left across the checks, at right angles to their length, and may be easily filled up and smoothed down by running the smoother lengthwise of the checks in finishing up the work before seeding. All things considered, this is perhaps the least objectionable method of plowing checked land, but by using judgment good results may be had also from the second method.

Here let it be said that the exercise of good judgment in the intelligent adaptation of means to the desired end is necessary all through the work of preparing land for irrigation. In fact, irrigation farming throughout requires skill and forethought, and success in it cannot be had by hit-or-miss methods.

PLOWSOLE.

While on the subject of plowing let us say a few words on the matter of plowsole. On loamy soils, which are the best of all soils for general purposes, continued plowing at the same depth causes the formation of a hard, compact, layer of soil known as plowsole or plowpan. This hard layer is not very thick, usually only two or three inches, but on account of its compact texture it interferes seriously with the root development of fleshyrooted plants like alfalfa, and also hinders the percolation or soaking in of the irrigation water. Wherever loam soils have been farmed to grain for a long period, with shallow plowing customary for grain in California, there will be more or less plowsole. Where this exists it may easily be discovered by digging into the soil a few inches. At the depth of four or five inches, sometimes less, the shovel will strike compact soil that turns up in hard clods. Two or three inches deeper the soil will be found softer and more friable. The two or three inches of hard, compact soil is the plowsole. It should be thoroughly broken up and pulverized by deep plowing and working of the land before planting alfalfa.

Careful observation shows that where alfalfa has been planted without first plowing the land to break up the plowsole, the growth of the alfalfa has not been satisfactory. The roots have penetrated only a short distance into the soil because their growth has been retarded by the plowsole.

Except on the lightest of sandy soils proper preparation of land for the planting of alfalfa should always include plowing. Where plowsole exists deep plowing becomes absolutely essential. Without it, good results cannot be reasonably expected, and in most case serious disappointment must inevitably follow.

AFTER PLOWING, IRRIGATE AGAIN.

When the plowing is finished it is necessary to irrigate again, unless heavy rain comes, as may happen in the fall. The reason of this is that plowing leaves the surface soil too loose to make a good seed bed. Alfalfa requires a firm, well-settled seed bed, therefore the plowed soil should be settled by water, whether by rain or irrigation. Moreover, if the weather has continued dry and as warm as it is apt to be during September and October, turning up the soil with the plow will have dried it out considerably. The first irrigation, applied before plowing, does not wet the land down very far, as may be easily ascertained by digging or boring. A more copious watering is therefore needed in order to put moisture enough into the soil not only to bring the alfalfa up, but also to carry it along until it is high enough to irrigate with perfect safety. Irrigating after plowing fulfills this purpose admirably, as the freshly plowed land is in the best possible condition to absorb plenty of water.

In irrigating at this time care must be taken to avoid washing, as the loose plowed soil will be apt to wash if water is applied too rapidly or in too large a quantity at once.

TIME TO HURRY.

As soon as the land is dry enough to work, get on it with a harrow and work the surface thoroughly to a fine, mellow seed bed. The spike-tooth or drag harrow is better for this purpose than the disc, because it does not turn up the soil so much to the drying influences of sun and air, and because in most cases it will make a finer seed bed.

Do not wait for all the land to dry out before you begin to harrow, but harrow the drier portions first and finish up wet spots as fast as you can get on to them. It is important to stop the evaporation of moisture as quickly as possible and also to work the surface before it gets too dry to make a good, mellow seed bed. This is the time to hurry, especially should the weather be warm and dry!

Several harrowings will usually be required to make a good seed bed. Do not be satisfied with anything short of a good one. This is a critical point at which a good many fail. There is no rule to fit all cases; simply keep on harrowing until you have the surface inch or two as mellow as an onion bed.

SOW PROMPTLY.

Have your seed ready on hand, being sure that it is fresh, plump and free from dodder, and as soon as the seed bed is prepared get the seed into the ground. Lose no time, unless delayed by rain, in which case the seed bed if packed by the rain must be worked up again.

The most critical time in planting alfalfa is the time between irrigation and seeding, and delay at this time causes more failures than anything else. Harrowing and seeding should be rushed as rapidly as is compatible with good work. A delay of a day or two will sometimes make all the difference between a good stand and a poor, spotty one.

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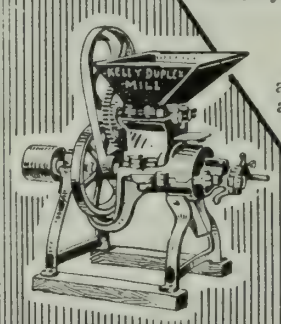

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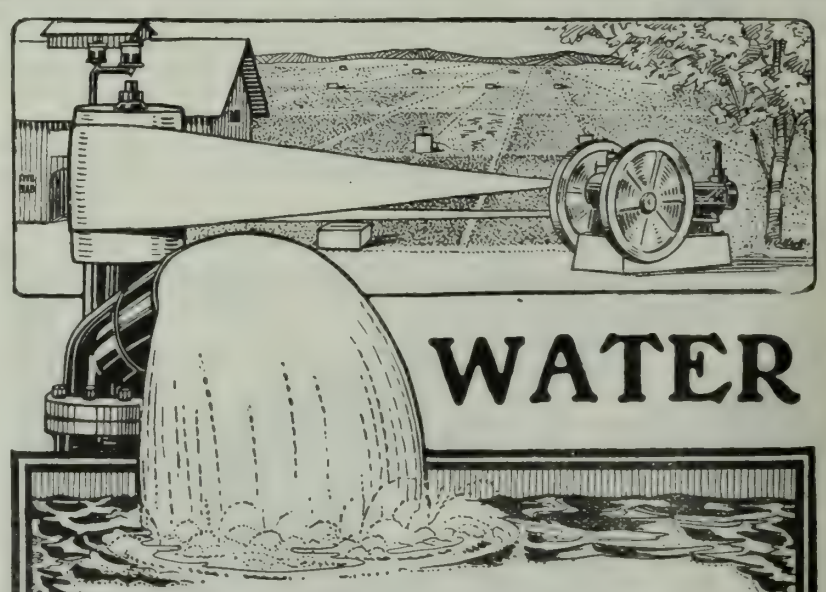

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READ-MILLER CO.

Eggs For Hatching by Parcels Post Versus Express.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

The hatching season will come around very soon and before it arrives it is better to thresh out this problem.

I am a stickler for parcel post, or anything else that the government can handle, but as yet I do not believe they are prepared to handle, successfully, eggs for hatching.

Last season I had several requests from customers, to ship their orders by parcel post, because it was handier for them. And right here I want to say that, being handy is a great saving for the farmer or his wife during a busy season; also it is no doubt cheaper in many cases by parcel post. So here we have two items that are of vast importance to the farmer, because sometimes he has to drive several miles to get a package by express.

But in spite of the many ingenious devices gotten up for parcel post shipments, so far as I can learn none of them have proven satisfactory. In the first place the postal requirements are for either a wooden box or one stiff enough to pass through the mails without breakage. These are generally corrugated paste board with separate individual compartments. One shipper says "I tried a box that has been in use in England, where eggs have been sent by parcel post for years. Eggs sent in this box a distance of 250 miles from my place arrived all broken.

Among the systems which have been found to carry the eggs safely, that is without breakage, is "The Wright Hatching Egg Box." The "Wright" box is a double one and each egg is placed in a small corrugated cardboard tube which has cardboard disks fitting each end of the tube. In this system there is little or no chance for excelsior, cotton or other wrappings to relieve the egg from the shock or jar or vibration in transportation. The 15 egg sizes cost $1.85 per dozen, and while they do carry the eggs unbroken it has been proven that very few chicks hatch from the eggs.

TESTING IT OUT.—Another big shipper of hatching eggs says, "I made several tested shipments during the past season to friends and relatives in order to try out the probable parcel post as a profitable method of shipping hatching eggs. In all, about 200 eggs representing 15 individual shipments were made, besides several additional shipments to customers who expressed the wish to have them sent by parcel post, and results so far as received were as follows.

15 Barred Rocks sent a distance of 250 miles, arrived every egg safe, but hatched only six chicks, whereas eggs sent from the same pen by express and four times the distance hatched 75 per cent and better all the season through; 15 S. C. Red eggs sent the same party at a later date, arrived all safe, but hatched again only six chicks, where eggs from the same pens sent all over the United States by express hatched all the season from 85 to 100 per cent; 15 S. C. Red eggs were sent by parcel post to Aurora, Illinois, a distance of over 1000 miles, and arrived intact, but again hatched only six chicks, while a shipment sent by express hatched 15 chicks; 15 light Brahma eggs sent to Tennessee, a distance of 900 miles, and not an egg hatched, while 15 eggs from same pens and about same time were sent to Walla Walla, Wash., a distance of 4000 miles, hatched 12 chicks, the Tennessee shipment being sent by parcel post and the Walla Walla shipment by express. Our parcel post shipments, while not large, have proven that the limited amount of excelsior or other shock absorbent packing material that can be used in the space provided for such packing is not sufficient to protect the life germ in the egg from the constant jarring and vibration of transportation, with the result that the majortiy of the germs are killed in transportation."

The writer of the above very sensible ideas lived many years in Germany where he conducted an international mail order business, and he says, "If the government goes at it all right they can solve the problem as those countries have done."

HOW IT WAS DONE OVER THERE.—Over there the size of the package may be, and is, practically unlimited, as the packages are not sent in the mail pouches, but in the baggage cars the same as express matter is here. The writer has seen tombstones sent by parcel post in Europe which shows the vast scope of the system.

Separate clerks, employes and buildings are used for the parcel post shipments and the postoffice proper has nothing to do with it, not even selling the stamps, they being sold in parcel post departments where that business is conducted.

Separate clerks and wagons are waiting at the railroad station the arrival of the trains with parcel post shipments and they are handled just as separately as our express matter is, and in much the same manner.

NOTHING TO WORRY ABOUT.—Probably there will be some who will want to jump on the government's neck for allowing Europe, or little old England to do these things better than we can, but it is just as well to remember that this is a new departure for this government, and it had to be tried out in the face of great opposition from the big express companies who have waxed fat, these many years. Even now they are not without hope of winning back what they have lost. In the past years Americans paid very little attention to what their representatives did for their wages, the vast resources of the country made them prodigal, and they had no idea that it would ever be a case of conservation. Now they are learning better and are expecting more from their representatives. The men who are sent to Washington now have to, at least, make a pretense of earning their pay, and as they get more and more urge from the people they will work more for them, so in time we will have as good a system of parcel post as any nation. At present and until the system is made better I prefer to send eggs by express as of old.

Hatching eggs can not be treated as merchandise and tumbled about in a mail pouch, emptied on the floor with a thud and thrown back with a bounce. No sir! there is life waiting for proper development within the shell and if it gets a rude shake or jar it will forever lie dormant, for no quickening power can undo the jarring.

The postal authorities, clerks and mail men under the present system consider the parcel post as something of a nuisance adding, as it does to their work. So it would seem that we ought to remind our representatives that they should take a few lessons from the countries that have already worked up a successful system of parcel post. Of course, we have now passed through the first stages and have learned some from experience, but unless the legislative bodies are made acquainted with the weak places in the present system they will not be able to remedy them. Neither our parcel post nor postal savings banks are of very much benefit to the government itself as yet, because they have done too much pandering to bankers and express companies, but let them alone awhile and they will grow.

THE POSTAL SAVINGS.—A banker once told me that the postal savings bank "would not do in this country." I asked him why? "Oh," he said, "this country is too large—it is not like England." I said, "Well, grant that this is a large country, then the men who govern it and make laws must be of the same caliber and if they are not, and their minds can't or won't expand to fit the country, yank 'em out of office." He laughed and said, "I will have to give you some literature." I pointed to my button, "Boost postal savings banks," and told him that I would have to give him a button.

And you see the postal savings bank came and released thousands of dollars from old tomato cans, underground banks, and all sorts of crude places, simply because the people had faith in the government that stood behind the postal savings bank. And yet that same government, instead of using the peoples' money that is intrusted to them to make loans to the people themselves, turns it over to the banks to loan out and make money.

We have nothing to boast of yet, but it's coming and at no distant day. This parcel post and savings bank system will be in the position of the man who "lost his popularity."

The song says "He lost his popularity and that is worse than crime, No matter what he may have been once upon a time."

For the present and coming season I expect to ship eggs by express, in baskets with plenty of excelsior around them to save the jar and whenever we get a better system of parcel post I'll soon flop over to the government's side of the deal.

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The Home Circle.

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Santa Claus and Little Billee.

By JOHN KENDRICKS BANGS,
Author of "The Idiot," "A Houseboat on the Styx," etc.

(Continued from last week.)

Santa Claus made no reply to this remark, beyond giving a very deep sigh, which Little Billee chose to believe was evidence of a great inward content. They walked on now in silence, for Little Billee was beginning to feel almost too tired to talk, and Santa Claus seemed to be thinking of something else. Finally, however, the little fellow spoke.

"I guess I'd like to go home now, Mr. Santa Claus," he said. "I'm tired, and I'm afraid my mamma will be wondering where I've gone to."

"That's so, my little man," said Santa Claus, stopping short in his walk up and down the block. "Your mother will be worried for a fact; and your father, too—I know how I'd feel if my little boy got losted and hadn't come home at dinner time. I don't believe you know where you live, though—now honest! Come! 'Fess up, Billee, you don't know where you live, do you?"

"Why, yes, I do," said Little Billee. "It's in the big gray stone house with the iron fence in front of it, near the park."

"Oh, that's easy enough!" laughed Santa Claus nervously. "Anybody could say he lived in a gray stone house with a fence around it, near the park; but you don't know what street it's on, nor the number, either, I'll bet fourteen wooden giraffes against a monkey on a stick."

"No, I don't," said Little Billee frankly; "but I know the number of our orty-mobile. It's—'N. Y.'"

"Fine!" laughed Santa Claus. "If you really were lost, it would be a great help to know that; not being lost, as you ain't, why, of course, we can get along without it. It's queer you don't know your last name, though."

"I do, too, know my last name!" blurted Little Billee. "It's Billee. That's the last one they gave me, anyhow."

Santa Claus reflected for a moment, eyeing the child anxiously.

"I don't believe you even know your papa's name," he said.

"Yes, I do," said Little Billee indignantly. "His name is Mr. Harrison."

"Well, you are a smart little chap," cried Santa Claus gleefully. "You got it right the very first time, didn' you? I really didn't think you knew. But I don't believe you know where your papa keeps his bakeshop, where he makes all those nice cakes and cookies you eat."

Billee began to laugh again.

"You can't fool me, Mr. Santa Claus," he said. "I know my papa don't keep a bakeshop just as well as you do. My papa owns a bank."

"Splendid! Made of tin, I suppose, with a nice little hole at the top to drop pennies into?" said Santa Claus.

"No, it ain't, either!" retorted Little Billee. "It's made of stone, and has more than a million windows in it. I went down there with my mamma to papa's office the other day, so I guess I ought to know."

"Well, I should say so," said Santa Claus. "Nobody better. By the way, Billee, what does your mamma call your papa? 'Billee,' like you?" he added.

"Oh, no, indeed," returned Little Billee. "She calls him papa, except once in a while when he's going away, and then she says, 'Good-by, Tom.'"

"Fine again!" said Santa Claus, blowing upon his fingers, for now that the sun had completely disappeared over in the west, it was getting very cold. "Thomas Harrison, banker," he muttered to himself. "What with the telephone book and the city directory, I guess we can find our way home with Little Billee."

"Do you think we can go now, Mr. Santa Claus?" asked Little Billee, for the cold was beginning to cut through his little coat, and the sandman had started to scatter the sleepy seeds all around.

"Yes, siree!" returned Santa Claus promptly. "Right away off now instantly at once! I'm afraid I can't get my reindeer here in time to take us up to the house, but we can go in the cars—hum! I don't know whether we can or not, come to think of it. Ah, do you happen to have ten cents in your pocket?" Santa added with an embarrassed air. "You see, I've left my pocketbook in the sleigh with my toy pack; and, besides, mine is only toy money, and they won't take that on the cars."

"I got twenty-fi' cents," said Little Billee proudly, as he dug his way down into his pocket and brought the shining silver piece to light. "You can have it, if you want it."

"Thank you," said Santa Claus, taking the proffered coin. "We'll start home right away; only come in here first, while I telephone to Santaville, telling the folks where I am."

He led the little fellow into a public telephone station, where he eagerly scanned the names in the book. At last it was found—"Thomas Harrison, seven-six-five-four Plaza." And then, in the seclusion of the telephone booth, Santa Claus sent the gladdest of all Christmas messages over the wire to two distracted parents:

"I have found your boy wandering the street. He is safe, and I will bring him home right away."

Fifteen minutes later, there might have been seen the strange spectacle of a footsore Santa Claus leading a sleepy little boy up Fifth avenue to a cross street, which shall be nameless. The boy vainly endeavored to persuade his companion to "come in and meet mamma."

"No, Billee," the old man replied sadly, "I must hurry back. You see, kiddie, this is my busy day. Besides, I never go into

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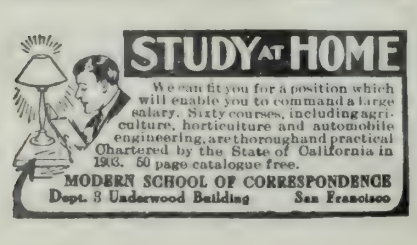

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a house except through the chimney. I wouldn't know how to behave, going in at a front door."

But it was not to be as Santa Claus willed, for Little Billee's papa and his mamma, and his brothers and sisters, and the butler and the housemaids, and two or three policemen, were waiting at the front door when they arrived.

"Aha!" said one of the police, seizing Santa Claus roughly by the arm. "We've landed you, all right! Where have you been with this boy?"

"You let him alone!" cried Little Billee, with more courage than he had ever expected to show in the presence of a policeman. "He's a friend of mine."

"That's right, officer," said Little Billee's father; let him alone—I haven't entered any complaint against this man."

"But you want to look out for these fellers, Mr. Harrison," returned the officer. "First thing you know they'll be makin' a trade of this sort of thing."

"I'm no grafter!" retorted Santa Claus indignantly. "I found the little chap wandering along the street, and as soon as I was able to locate where he lived, I brought him home. That's all there is to it."

"He knew where I lived all along," laughed Little Billee, "only he pretended he didn't just to see if I knew."

"You see, sir," said the officer, "it won't do him any harm to let him cool his heels——"

"It is far better that he should warm them, officer," said Mr. Harrison kindly. "And he can do that here. Come in, my man," he added, turning to Santa Claus with a grateful smile. "Just for a minute, anyhow. Mrs. Harrison will wish to thank you for bringing our boy back to us. We have had a terrible afternoon."

"That's all right, sir," said Santa Claus modestly. "It wasn't anything, sir. I didn't really find him—it was him as found me, sir. He took me for the real thing, I guess."

Nevertheless, Santa Claus, led by Little Billee's persistent father, went into the house. Now that the boy could see him in the full glare of many electric lights, his furs did not seem the most gorgeous things in the world. When the flapping front of his red jacket flew open, the child was surprised to see how ragged was the thin gray coat it covered; and as for the good old saint's comfortable stomach—strange to say, it was not!

"I—I wish you all a merry Christmas," faltered Santa Claus; "but I really must be going sir——"

"Nonsense!" cried Mr. Harrison. "Not until you have got rid of this chill, and—"

(To be continued.)

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Once upon a time a farmer, seeing an ad for a cheap telephone, ordered one.

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In due time the phone arrived and was unpacked. It looked pretty good, the farmer thought. He installed the phone at once.

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Yes it did—at first; but as the days and weeks and months wore by this farmer began to realize that his telephone was not so cheap after all—unreliable service and repairs, due to cheap material and poor construction, made that telephone in reality a high priced one.

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Preparing Waxed Floors.

[Written for the PACIFIC RURAL PRESS.]

How often one hears the housewife remark that the floors in her house are disgraceful or that she wished this or that room's floor could be finished to correspond with the interior woodwork.

Since the rug or bare floor has replaced the carpet to a large extent the floor finish in the dining room, living room and bedroom has attracted more attention than before and often causes a great deal of worry.

For the new or little used floor the finishing is comparatively simple, but to take the old floor which is full of tack holes, the task becomes more difficult. For such floors some dark stain is preferable as that covers up the defects much better than a natural finish. An oil stain is best for such floors, as it does not set fast and shows the grain of the wood much better than a varnish stain would. All dealers carry stains in different colors, and as it requires some ability to mix to the desired shade, it is better to buy the ready mixed article. In applying, any kind of paint brush may be used, the only point to be observed is to take only eight or ten boards at a stretch. After each stretch has been stained an old rag is used to wipe off the surplus color in order to bring out the grain of the wood, the principle being that the grain does not absorb so much color as the softer part, and in that way the high lights are brought out.

Although many do not care for a higher gloss than the plain stain finish, yet when no further work is done, the floor is hard to keep clean looking and for that reason it is advisable to apply a coat of shellac. Before applying it should be thinned with alcohol so that it spreads easily. Care should be exercised with this, as it dries very fast and it is best not to take more than five or six boards for a stretch.

If a waxed finish is desired, the shellacked surface should be smoothed down with sandpaper and then waxed and polished. Directions are printed on the package of wax and by carefully following them a good job will result.

Where a new floor is to be finished natural, it should be absolutely free from dark colored spots and dirt. For this kind of a finish the stain is omitted and the shellac applied to the bare wood and further waxed, if desired as above explained.

The wax finish is usually the most popular as it can be gone over and polished at any time without upsetting the whole house, a feature that is hard to overcome where paint is used.

Mr. Snibbles got out of bed and slipped on his shoes. "This must stop," he muttered, irritably, to his wife. "I'm going to teach that young man to keep away from my house in the future." "John," cried his wife, "stop! Don't go——" But before she could say more he had slipped out of the door. She heard him steal downstairs to the drawing room; she heard sounds of struggle and of the breaking of glass; she hear him drag his adversary to the hall and kick him down the front steps. Then when he returned she flung herself to him admiringly. "What's the matter?" he demanded. "Don't you know?" she answered. "That was a burglar!" "Great Scott!" he gasped, turning pale. "Why didn't you tell me before? I thought it was Ethel's sweetheart."

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Lisle M'f'g. Co.

Suite, 512, 1480 Third St., San Francisco, Cal.

Blake, Moffitt & Towne

PAPER

Dealers in 37 FIRST ST., SAN FRANCISCO. Blake, Moffit & Towne, Los Angeles Blake, McFall & Co., Portland, Ore.

THE MARKETS.

San Francisco, Dec. 10, 1913.
(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

Prices have not changed in the last week. Trading is quiet, as there is a normal slowing down just before the holidays. Stocks here are not heavy, however, and values are very steadily held.

California Club, ctl	$1.45	@1.50
Forty-fold	1.50	@1.52½
Northern Club	1.45	@1.50
Northern Bluestem	1.67½	@1.70
Northern Red	1.55	@1.70

BARLEY.

There is still considerable trading in futures, but the spot grain is quiet. Supplies are lower than last year, and values are quite firm all along the line, though there has been some decline within the last month.

Brewing and Shipping	$1.37½	@1.42½
Choice Feed, per ctl	1.27½	@1.32½
Common Feed	1.25	@1.27½

OATS.

The movement is now about over for the planting season, and has been lighter than was expected. Considerable stock of some varieties is left on hand, causing a slight weakening of prices.

Red Feed	$1.65	@1.85
Seed	2.10	@2.30
Gray	Nominal	
White	1.45	@1.50
Black Seed	2.50	@3.00

CORN.

Eastern corn is firmer at the moment, as there is little on hand and some inquiries have appeared. Shipments are due shortly, however, and values stand nominally about the same. No California corn is offered, and little Egyptian is moving in the local market.

California Yellow	Nominal	
Eastern Yellow	$1.85	@1.90
Eastern White	Nominal	
Egyptian	1.57½	@1.62½
Kaffir	Nominal	

RYE.

All grades are quiet at present, prices being nominally as last quoted.

Rye, per ctl	$1.45	@1.50
Seed	1.65	@1.70

BEANS.

The bean market has settled down into the usual quiet rut of the holiday season, as buyers are turning their attention to seasonable lines, and have already filled their requirements of staples for the month. Considering the comparatively heavy movement that has already taken place, a renewal of activity may be delayed for some time, though a good spring movement is anticipated. The market is in satisfactory shape for this time of year, supplies in sight being much less than a year ago, and the generally firm feeling in regard to prices continued. Under present quiet conditions prices naturally show little change, but cranberry beans have been marked up a little.

(On wharf.)

Bayos, per ctl	$4.25	@4.50
Blackeyes	4.00	@4.25
Cranberry Beans	4.00	@4.25
Horse Beans	1.90	@2.10
Small Whites	4.75	@5.00
Large Whites	3.10	@3.25
Limas	5.00	@5.10
Pea	Nominal	
Pink	3.00	@3.25
Red Kidneys	4.25	@4.50
Mexican Red	3.75	@4.00

SEEDS.

The general demand has fallen off somewhat of late, most lines being rather quiet at the moment, though a little more activity is expected after the first of the year. Prices stand nominally as before.

Alfalfa	12½	@15 c
Broomcorn seed, per ton	Nominal	
Brown Mustard, per lb		3¾c
Canary	7	@ 7½c
Hemp	2½	@ 3 c
Millet	2½	@ 2¾c
Timothy	7½	@ 8 c
Yellow Mustard	Nominal	

FLOUR.

There is little feature to the market, as values are unchanged, and supplies are kept about even with the demand, with frequent shipments from the North.

Cal. Family Extras	$5.60	@6.00
Bakers' Extras	4.65	@5.20
Superfine	3.90	@4.10
Oregon and Washington		4.90

Hay and Feedstuffs.

HAY.

The continued dullness in the local market has caused some recession in prices, the improved crop and feed outlook also being partly responsible for the weakness. The demand here continues extremely light, arrivals showing practically no increase. The arrivals for the month of November have dropped off to a marked extent in the last two years, from 11,864 tons in 1911 to 6469 this year. This is attributed mainly to the greater use of motor vehicles, and partly also to the loss of outside business owing to high prices, and to the removal of dairies from San Francisco. Considerable improvement in demand is expected after the turn of the year, however, as stocks put in by consumers early in the fall are now running quite low, and should be well cleaned up by that time.

No. 1 Wheat, or Wheat and Oats	$15.00@16.00
do No. 2	13.00@14.00
Lower grades	12.00@@13.00
Tame Oats	12.50@16.00
Wild Oats	11.00@14.00
Alfalfa	10.00@14.00
Stock Hay	9.00@10.00
Straw, per bale	65@ 90c

FEEDSTUFFS.

All lines remain quiet, the general country demand being much lighter since the rains, and values are easy. The only quotable change is a sharp decline in cocoanut meal.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	23.00@24.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	28.00@29.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	28.00@29.00
Rolled Oats	33.00@34.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

Local winter vegetables show considerable firmness, supplies in some lines being short. Cauliflower, though of poor quality, cleans up well at current quotations, and good cabbage is higher, while a sharp advance has been made in celery and lettuce, the temporary oversupply being well cleaned up. Mushrooms are a little higher, and rhubarb is moving off well. Some local tomatoes are still offered at about the old prices, but most offerings are coming from the south. Supplies of southern garden truck in general have been rather above local needs, and prices are easy in most lines.

Cabbage, per ctl	$ 1.50	@ 1.75
Cauliflower, dozen	40	@ 60c
Cucumbers, Southern, box	50	@ 75c
Green Peppers, lb	1	@ 2c
Carrots, per sack	50	@ 65c
Green Peas, Southern, lb	5	@ 8c
String Beans, lb	4	@ 7c
Summer Squash, lug box	75c	@ 1.00
Tomatoes, Southern, crate	65	@ 90c
Eggplant, box	40c	@ 1.00
Lima Beans, lb	3	@ 5c
Sprouts, lb.	4	@ 5c
Celery, large, crate	1.75	@ 2.25
Rhubarb, box	75c	@ 1.25
Lettuce, crate	1.75	@ 2.25
Mushrooms, lb.	10	@ 15c

POTATOES, ONIONS, ETC.

Salinas potatoes are now practically sold out, and are no longer quoted. Fancy river goods bring a little better price, but few offerings will sell over $1, and Oregon stock is lower. Quite a lot of northern potatoes are being used, some from as far as Idaho. River onions are higher with only light supplies in strong hands, though Oregon onions have been shaded.

Potatoes—		
New River Whites	75c	@$1.15
Sweet Potatoes, per ctl	1.00	@ 1.25
Oregon Burbanks	85c	@ 1.25
Onions: Yellow River, ctl	$ 2.00	@ 2.25
Oregon	2.25	@ 2.40
Garlic, per lb	7	@ 8c

Dairy Produce.

POULTRY.

No further change has been made in prices. Arrivals for the week have been light, and with a little better demand the last day or so there is a firmer feeling. Dressed turkeys are again coming in, but find only moderate demand just at present.

Large Broilers, per lb	20	@22	c
Small Broilers, per lb	28	@29	c
Fryers, per lb	18	@19	c
Hens, extra, per lb	17	@18	c
Hens, large, per lb	17	@18	c
Small Hens, per lb	14	@15	c
Old Roosters, per lb		12	c
Young Roosters, per lb	18	@20	c
Squabs, per doz	$ 1.50	@ 2.00	
Geese, per pair	2.00	@ 3.00	
Ducks, doz.	4.50	@ 8.00	
Turkeys, live, per lb	21	@22	c
do dressed	25	@27	c

BUTTER.

The market has again been upset by large arrivals of Australian stock, and prices have dropped a little. There are some indications of firmness, however, offerings on the Exchange being readily disposed of, with an advance of ½c since the first of the week.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32	31½	31½	31½	32	32
Firsts	31	30½	30½	30	30	30

EGGS.

Extra eggs continue to fluctuate, the changes being followed to some extent by pullets. Supplies are coming forward slowly most of the time, keeping the range of values much higher than last year, though an occasional large shipment causes momentary declines.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	47	45½	47	50	51	47½
Selected Pullets	42½	42½	44	45	45	43½

CHEESE.

There is little feature to the market, supplies continuing light enough to keep prices pretty firmly to the recent level, with little fluctuation.

Fancy California Flats, per lb	17½c
New Young Americas, fancy	17 c
Monterey or Jack Cheese	20@22 c

Deciduous Fruit.

The variety of deciduous fruit offered in the local market has been further narrowed during the last week, raspberries, Coos Bay cranberries, and several other lines being dropped from the list. Eastern cranberries continue to find a very fair demand at a slight reduction from the former quotation, while strawberries are scarce and move only in a very limited way at rather poor prices. Winter Nelis pears are higher, and apples are very firm at the old level, with light arrivals and a little better demand. Few varieties of grapes remain, and they are moving off gradually at the old prices.

Strawberries, chest	$ 3.00	@ 8.00
Cranberries: Cape Cod, bbl	12.00	@13.50
Apples: Baldwins	1.15	@ 1.50
Spitzenbergs	1.10	@ 1.60
Greenings	1.00	@ 1.35
Bellefleur	1.25	@ 1.75
Newtown Pippins	1.25	@ 1.75
Pears: Winter Nelis	1.50	@ 2.00
Grapes, crate	75c	@ 1.00

Dried Fruits.

The local dried fruit market is dragging along in about the usual way for this time of year, business having been quiet for several weeks, and no shipping demand of any consequence is expected until after the first of the year. As most Eastern interests are said to be rather lightly supplied in most lines, there should be a gradual movement during the late winter and early spring, but at present the trade is concentrating attention on selling. The market, however, is in an extremely strong position in most lines, and it is possible that better prices may be realized on the remaining stock. The shortage of prunes is beginning to be realized, as stocks in packers' hands are very small, most packers being reported about cleaned out. Some effort is being made to pick up additional supplies in the country, and an advance might be obtained on the larger sizes, if there are any left. Packers are in a more doubtful position, though supplies in the hands of packers and dealers are not large. In other lines, conditions are about as before. The New York Journal of Commerce says:

"Stocks of California prunes remaining on the Coast are said to be unusually strong and controlled by one or two holders. One large packing interest which was understood to have had a considerable stock of 1912 prunes is reported to be closely cleaned up. Only one of the leading packers is understood to have any stock of 1913 fruit to sell, and, according to report, his holdings are much below the average for this time of the year, particularly in the popular sizes. Among other Coast holders the advices received here say the stock is small and scattered. On the spot the movement in prunes on jobbing orders is fairly active, and on both California and Northwestern fruit the trend of prices is upward.

"While there is little demand for spot peaches and apparently none for forward shipments from the Coast, the market has a firm tone, and some buyers have, it is said, been compelled to pay a premium on stock actually needed in the finer grades. Apricots are quiet, but owing to the close clean-up on the stock and small offerings here the market remains firm.

"California raisins are inactive, but

CLASSIFIED ADVERTISEMENTS.

Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

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WANTED—Young French Shepherd or Scotch Collie, male, for farm. Address C. MUELLER, 1306 K St., Fresno, Cal.

WANTED—25,000 Burbank cactus leaves in varieties, for spring delivery. P. O. Box 265, Santa Rosa, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

TREES AND NURSERY STOCK

CITRUS TREES—Washington Navels, ½ to ⅝ in., 70c; Washington Navels, ⅝ to 1¼ in., 80c; Valencias, ½ to ⅝ in., 75c; Valencias, ⅝ to 1¼ in., 85c; Eureka Lemons, ½ to ⅝ in., 75c; Eureka Lemons, ⅝ to 1¼ in., 85c; Grape Fruit, ½ to ⅝ in., 80c; Grape Fruit, ⅝ to 1¼ in., 90c. Above prices are for Balled Trees f.o.b. Glendora; 5c less packed in moss. Order any kind of tree you like and I will furnish same. Florida Sour and native sweet seed-bed stock. One-third cash must accompany all orders. W. O. West, Glendora, Cal.

WALNUT TREES WITH AN ANCESTRY—Placentia Perfection, Black Root. Sions taken from trees that have had the following requirements for the past four years. Heavy crop, smooth large nuts, rapid growth, symmetry and absolutely free from disease. Some 18 feet high. All this year's growth. Valencias, Navels, sour seed bed stock. Commercial species of Eucalypts in quantities. Cerro Villa Nursery at Villa Park. Address Hugh T. Thompson, Orange, Cal.

GRAFTED FRANQUETTE WALNUTS—Our nuts bring $100 more per ton than the best Santa Barbara seedlings and our Royal root grows 50% faster than the average California root. It took us 10 years to develop this combination. It is at your immediate disposal. Awarded silver medal at the San Francisco Land Show. Write us for number you need. Catalogue and prices on application. Imperial Walnut Nurseries, R. D. 7, San Jose, Cal.

SPINELESS CACTUS—BURBANK'S improved varieties; forage and fruiting cactus. Orders now taken for Spring 1914 delivery. There is a limited supply of the improved varieties for sale. Send for catalogue and price list. Santa Rosa Spineless Cactus Farms, or Jesse I. Jewell, Santa Rosa, Sonoma Co., Cal.

Plant your orchard with dynamite system. We planted, in the spring of 1913, 28,000 trees with a loss of only 2%. Contracts taken for planting trees in any part of the State; 18 years practical experience. Write to ZUUR & CO., Santa Rosa, Cal.

ALFALFA SEED—New crop, home-grown, clean and first class in every respect. Prices reasonable. Sample on application; also am in the market for a good Holstein sire. A. F. SCHEIDECKER, Blacks, Yolo County, Cal.

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BERRY PLANTS AND RHUBARB—Everything in small fruits for garden and orchard. Send today for price list. LOUIS F. SCRIBNER, Pasadena, Cal., R. F. D.

Fruit Trees, Berries and Small Fruits; acreage planting a specialty. Roses, Bulbs. Lists ready. H. A. HYDE, Watsonville Nurseryman.

BERRIES—Phenomenal Mammoth Blackberry. Oregon improved Strawberry. Also complete line of No. 1 Nursery Stock. Forestville Nursery, R. 2, Sebastopol, Cal.

FOR SALE—250 Franquette Walnut trees on Black Walnut root. Price $1.00 each. Address P.O. Box 21, Acampo, Cal.

Oregon Improved Strawberry Plants, excellent quality. $2 for 500, $3.50 per thousand. E. S. Comings, Graton, Cal.

50,000 apple trees on rented ground; must sell; order now at half price. Full Value Nursery, Petaluma, Cal.

STRAWBERRY RHUBARB plants for sale. The earliest rhubarb grown. F. H. WILLIAMS, San Leandro, Cal.

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holders are not trying to force sales in view of the strong statistical position, with the Associated Company practically dominating the situation owing to its control of the bulk of the stock.

Evap. Apples, 1913	6½@ 8 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4½c
Black	2½@ 3½c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 @ 4½c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4¼c

Citrus Fruits

Shipments of oranges from California have been very heavy for the past two weeks in order that the fruit would share in the holiday trade. These heavy lots, together with the 1,600,000 boxes of oranges from Florida, have glutted the markets so that prices are lower all along the line. The auction market at Los Angeles the first of the week showed this lowering by prices falling about 25c per box, f.o.b. California prices for good-sized oranges being from $1.50 to $1.70 per box. Lemons are scarce and the California growers are receiving good prices.

The first lot of southern California oranges came into San Francisco this week, and with northern stock fairly plentiful and slow of sale prices show a further recession. With lower prices and more attractive stock, however, a better movement is expected. Limes are a little higher than last week, other lines standing as before.

Oranges (per box):	
New Navels	$ 1.50@ 2.50
Tangerines, crate	1.75
Mandarin	1.25@ 1.50
Grapefruit, seedless	3.00@ 4.00
Lemons	2.50@ 6.50
Limes	4.00@ 5.00

Nuts, Honey, Hops, Etc.

NUTS.

Locally the nut market is without much feature, except for the usual lively holiday business in jobbing and retail circles. Stock in the country is closely cleaned up. New York reports the smallest supply on record for the Thanksgiving trade, with considerable stock in transit, but practically nothing left in first hands in Europe.

Almonds, new crop:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

There is not much activity in this market at present, but with light stocks and little available from primary points the market remains very firm as to values.

Comb, white	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

So far little new stock has appeared in the market, and as the old supply has been well cleaned up values are firmly held. There is no great demand at present, however.

Light	30 @32 c
Dark	28 @30 c

HOPS.

There is little trading in spot offerings, which by this time are fairly well cleaned up. Increasing interest, however, is taken in the 1914 crop, and some contracts are reported.

1913 crop	20@25c
1914 crop	15@17c

Live Stock.

All classes of live stock are quoted as before, most descriptions being rather firm than otherwise. A sharp advance is noted in dressed young lambs, which are scarce.

Steers: No. 1	7¼@ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼@ 6½c
No. 2	5¾@ 6 c
Bulls and Stags	2½@ 5 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	7¾@ 8 c
150 to 250 lbs	8¼@ 8½c
100 to 150 lbs	8 @ 8¼c
Prime Wethers	4¼@ 4½c
Ewes	3½@ 3¾c
Lambs: Suckling	5¾@ 6 c

DRESSED MEATS.

Steers	12 @12½c
Heifers	11 @11½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	12½@13 c
Dressed Hogs	13½@14 c

WOOL.

There is nothing doing in this market, and no trading of any consequence is expected until the spring shearing is started.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

Heavy Steers, over 56 lbs.	15½c
Medium	15 c
Light Steers, under 48 lbs.	15 c
Heavy Cows, over 50 lbs.	15 c
Light Cows, 30 to 50 lbs.	16 c
Kip	15 @16 c
Veal	18 @19 c
Calf	18 @19 c

HORSES.

Shipments to this market continue fairly large, covering a good general range of weights and classes, though as usual the number of horses of the more desirable types is limited, and only such stock will bring full prices. Buyers, however, continue to take a fair amount of interest, and sales are more numerous than for a long time past.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	150@200
Wagon Horses, 1250 to 1350	100@150
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	75@100

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

A good many subscribers have written us asking for our special offer in connection with our new book, "One Thousand Questions in California Agriculture Answered." This book will be ready for delivery next week and will be worth several times its price of $1.50 to every farmer who secures a copy. Whether you are a stockman or a fruit-grower, whether your main interest is in poultry or dairying or in raising vegetables, you will find good value in the book. We want you to have a copy. Read the announcement in the front part of this issue and then write us.

Many of our subscribers are sending us an extra subscription or two with their renewals and urge us to push the paper into the hands of every farmer of the West. We know that this journal is well worth the subscription price and also that we are pushing our subscription campaign as rapidly as possible. In this work every friend can help greatly by calling the attention of his neighbors to the value of the PACIFIC RURAL PRESS. Such recommendation means much in the way of increased circulation.

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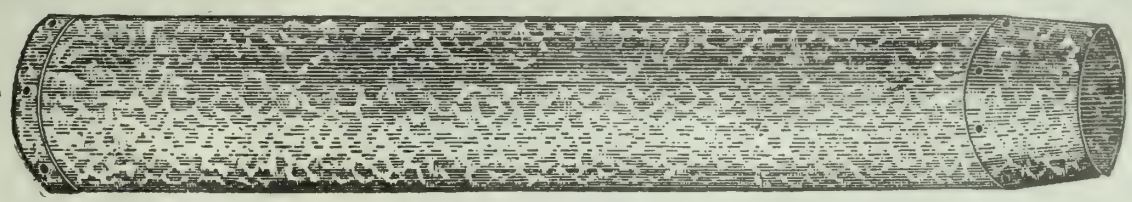

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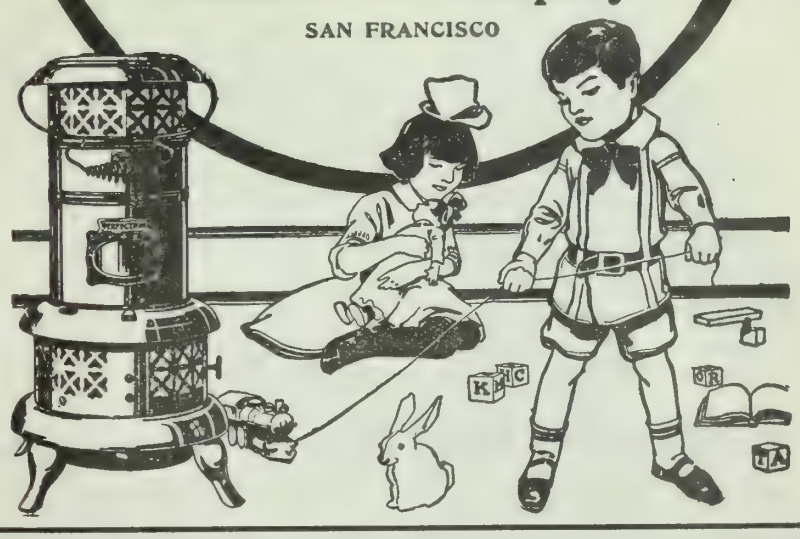

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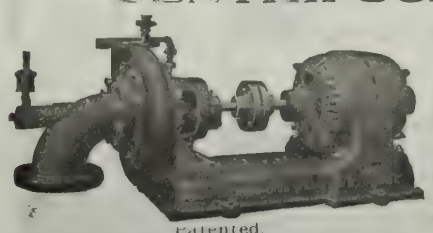

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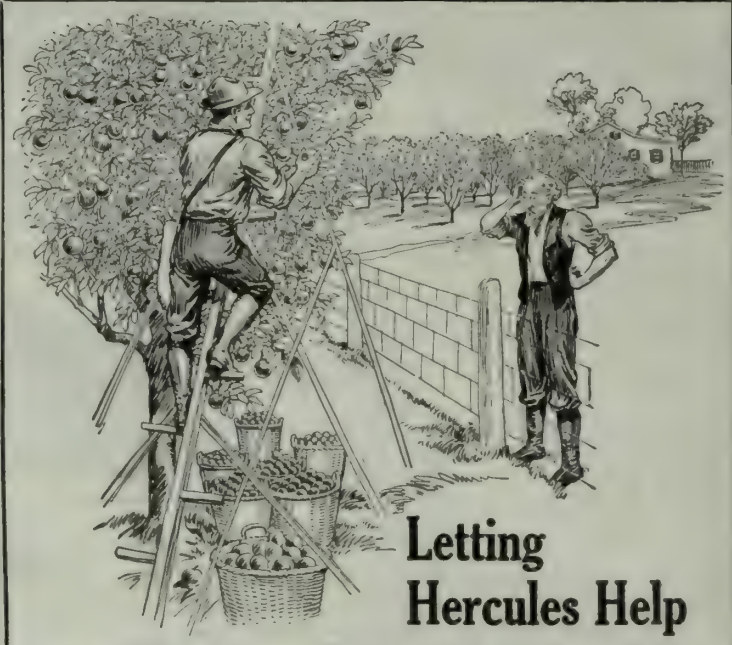

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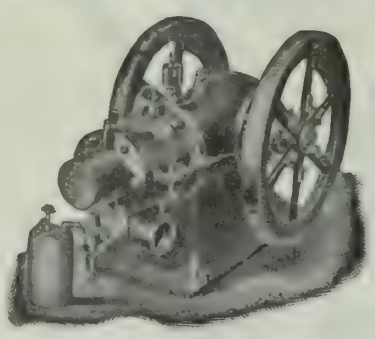

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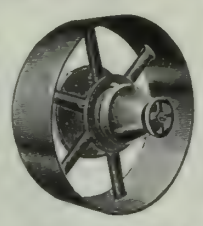

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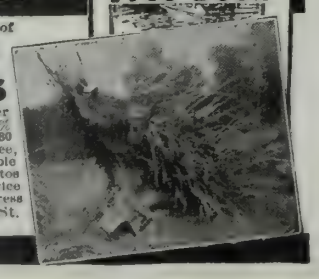

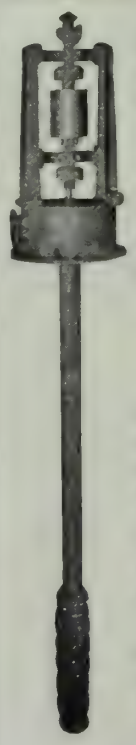

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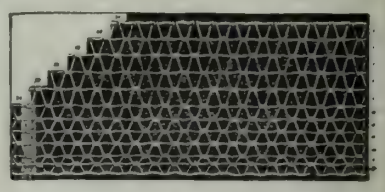

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A Record With Cling Peaches.

[BY THE ASSOCIATE EDITOR.]

The record with cling peaches made by C. H. Schmidt on his nine-acre orchard at the edge of the town of Selma, Fresno county, is worth telling on its own account and as a description of successful horticultural methods. Other orchards have given larger single yields at times, but rarely have any made as good a showing from all angles, and a fundamental feature is that there were no special natural advantages, the soil being a little below standard at the start, if anything. At least it was quite streaked, some was good and some was poor, and the trees vary greatly in different parts as a result. Any man in an ordinarily good location ought to be able to do as well with no more than normal expense in labor or otherwise.

This orchard, though planted only in 1908 in large part, looks to be twelve years old instead of six. Where the soil is best the trees, in size and thrift, are unsurpassed anywhere. Where the soil is poorer they are fully up to standard of trees of equal age in good soil and given good care.

Results are shown in production. The third summer after planting, the trees produced 25 tons of fruit, the next year 70 tons, 110 tons in 1912, and a little over 80 tons this season. The smaller crop of this year was due to frost, not lack of vigor, and the trees are in the best of shape now. Such results differ materially from those where big yields exhaust the trees.

A Good Start.—A great thing for the land was a stand of alfalfa which the orchard replaced. This greatly enriched the soil for many feet down. Another thing was dynamite. Although the soil is sandy, there is much cement in parts of the place, and where this occurred dynamite was used to break it up deeply. The land was also fertilized well the first year with stable and poultry manure. Since coming into bearing, commercial fertilizer containing [illegible] of phosphoric acid and potash has been used to replace plant [illegible] taken out by the crop. The amount has been gradually increased so that three-quarters of a ton per acre was used last year, costing $27 per ton. Heavier applications have been given the poorer trees, and Mr. Schmidt states that the smaller trees on naturally poor soil this year bore as much, wherever frosts permitted, as the largest and best trees in proportion to bearing surface.

Clean cultivation is practiced, so no cover crop is grown, but humus is abundantly supplied by the thick layer of leaves that fall in early winter, so that the soil is well looked after physically and chemically.

All the water the trees require is supplied, from the ditch when water is available there, and from a small electric pumping plant the rest of the summer. Irrigation is heavy enough to moisten the soil deep. Fertilization and irrigation give strong buds, and the regular bearing and comparatively little damage by frost is attributed to having this healthy wood and bud growth.

A Profitable Fresno County Peach Orchard. Good Tillage, Pruning, and Plenty of Water.

Pruning.—The heavy crop the third summer is alone an indication of unusual pruning methods, and the pruning methods are the result of the great growth that is due to rich soil and good care. The pruning back after the first summer's growth, was done according to the regular method, that is, severe shortening was the rule. Next summer, long, vigorous branches were developed, and instead of cutting these back, as is the common custom, to give thick, angular leaders, a number of these were left long and straight, being only tip shortened. This gave leaders of full length, straight from trunk to end, and with only small fruit wood along them. These leaders, by the way, start out very close to the ground.

As other seasons came and these leaders thickened and the shoots along them lengthened, they would, if neglected, have been too numerous, but as soon as crowding started, the crowders were removed.

(*Continued on Page 580.*)

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Dec. 16, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	.94	8 24	13.29	66	38
Red Bluff	1 34	6.68	7.77	62	38
Sacramento	.46	5 19	5.18	74	36
San Francisco	.64	7.29	5.82	64	40
San Jose	.80	5 10	4.34	70	32
Fresno	.08	2.27	2 69	66	40
Independence	.10	3 57	2 60	78	22
San Luis Obispo	.42	5.37	4 52	76	44
Los Angeles	.28	3.31	3.39	80	46
San Diego	.00	2.33	2 04	74	46

Out in the World Again.

[BY THE EDITOR.]

The American Commission on Agricultural Coöperation and Rural Credit in Europe began its called meeting in the assembly room of the Committee on Claims of the U. S. Senate in Washington on December 11. Our first thought was that Uncle Sam has to listen patiently to quite an army of claimants, since he has found it necessary to provide such a spacious audience room for them, and we presume this to be really the case. Our next thought was that it might be that Uncle Sam was foresighted enough to anticipate that one of the greatest claims to be made upon his sense of justice and his appreciation of the real need of the country, would be the claim for fair finance for agriculture and that a spacious place for its setting forth would be a wise provision. The room was actually about 35 x 70 feet, and though the meetings were executive throughout, and none but members of the Commission admitted, the space was none too great for them and their oratory. For the meeting was large and representative of the whole country—surprisingly large, considering the distances which members had to traverse and the fact that the Commission has no funds to meet traveling expenses.

It is interesting to note that the most distant States and Canadian Provinces were relatively better represented than the nearer. Perhaps this may be a reflection of the fact that the newer regions of the continent are most grievously oppressed with high interest rates and hard terms of loans and are enterprisingly onto their job of securing reforms in the interest of Western prosperity and development. However that may be, the fact was as stated. California, Nevada, Utah, Colorado, Oregon, Washington and the Canadian Province of Alberta were all represented, and thus the Pacific slope indicated the keenness of its interest by the preponderance of its representation, which called upon its nine members who were present, to traverse an aggregate of 56,000 miles—enough to carry one of them more than twice around the world. Other States which sent delegates were as follows: Connecticut, Florida, Georgia, Indiana, Massachusetts, Maryland, Michigan, Minnesota, New York, North Carolina, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, West Virginia, Wisconsin and the Province of Ontario. Everyone representing these 25 American Commonwealths had made the European trip, of April to August last, for study of farm finance abroad, so they were all personally acquainted and aware of each other's attitudes and convictions.

It is also very significant that the various transactions undertaken at the Washington meeting were by practically unanimous vote, which should lend weight to the conclusions of the Commission as they will be set forth in detailed reports which will soon be available to those who apply for them, in the way we shall presently suggest.

What the Commission Has Done Thus Far.

Upon the assembling of the Commission, an address was delivered by its Chairman, Senator Fletcher of Florida, reviewing its origin and work. He instanced the conception by David Lubin of the idea of personal study abroad by a large group of Americans and the collection of the Commission through the initiative and propaganda of the Southern Commercial Congress, as we have previously described in detail in these columns. This organization is not commercial except in name, for its chief function is to develop progress and prosperity in the Southern States by self-help of Southern people, rather than by the attraction of investments and enterprises from the outside. It should evidently have been named the Southern Development and Progress Congress, but it began, perhaps, with trading undertakings and took too narrow a name from that fact. When it began to look deeply into the needs of the South it discerned the truth of Mr. Lubin's claim that when farming is financed fairly according to its peculiar requirements, just as commerce and manufacturing have always been, then all other forms of advancement which agriculture needs will easily follow. And so the Southern Commercial Congress took up its propanganda, some of the results of which are the attitudes of two Presidents of the United States, the declarations of three national party platforms, the aggressive efforts of the President and Secretary of Agriculture in favor of rural credits in this country, the creation of the American Commission and its forceful work and the arousing of the wide public sentiment toward better financing of farming which now pervades the United States and the Canadian provinces. Such a result could never have been reached by expert studies of bureau economists. If the American Commission should not add an iota to the bookish information which previously existed, it has added a broad, vital human interest in the subject which is the basis of its present ascendency in the public mind. Senator Fletcher must not be held responsible for all these statements, for perhaps we have injected some reflections of our own, but we desire our constituency to clearly understand that the work of the Southern Commercial Congress has been fundamental in the present favoring attitude of the American people, and that the unfortunate narrowing of its name by the insertion of the word "Commercial" does not indicate that its work has proceeded from a commercial initiative, and its breadth and genuineness are therefore questionable.

Senator Fletcher did, however, say this, which we would like all readers to remember: "Some enemies of the present agitation of fair finance for farmers have endeavored to throw discredit on it by charging that it originated in Wall Street. This is a slander. The American Commission belongs to and proceeded from the agricultural interest of the country and it is going to co-operate with all who are true to that interest. We shall co-operate with the present Administration to secure a national banking statute which shall be fair to farming and farm-land security. The present national banking laws discriminate against them. We shall co-operate with the States and Provinces which desire to pass laws and establish farm-finance institutions within their own commonwealths. Under the old commercial system of finance the farmers have had no show. It is impossible to meet farming needs by institutions planned to answer commercial requirements. It is surprising that the American people have waited so long to be just to agriculture. The farmer does not demand special privileges; he demands that special privileges which have been so long against him be removed. He does demand that he shall have the same chance which is given to other interests and that the national banking system shall no longer discriminate against him."

Thus spoke Senator Fletcher, president of the American Commission, and in thus speaking, Senator Fletcher is right.

A Monumental Report.

In our last issue we outlined, in anticipation, the first volume of the Report of the American Commission, which was presented to the Commission by its "Committee on Compilation" as soon as the Washington meeting was duly opened. Its contents were sketched last week; also the geographical breadth of the study which yielded its thousand pages of "evidence and information," as its substance is called. It was submitted in printed form for acceptance by the Commission, and this was given by unanimous vote. It is a royal quarto; about as wide and high as an old-fashioned high-school geography and three times as thick. At first sight one might perhaps think it impossible of reading, but dip into it a little and a different impression will prevail—if one has any interest in the economics of agriculture as the world applies them to its every-day work. It is not a sermon, nor an argument, nor a systematic treatise such as only professional scholars can pursue without sleeping. It is a collection of the experiences of thousands of people in dozens of communities, regions and nations; telling how they have succeeded in getting money at interest rates which seem almost incredible to those who borrow money in this country. It tells how they organize for it; how their local and general governments make it possible for them to get it; how they use it in improving and increasing the products of their farms; how they use it in buying what they need and in selling what they produce, so that they get fair trade all around and a fair share of the market value of what they produce. Such things are outlined in the words of those who are doing them, and thus the reader gets, not reflections and conclusions, which he may, perhaps, doubt, but actual information from the fountain-heads thereof. As we may say: the reader is actually looking into the lives of the thousands of people whom the members of the American Commission saw and with whom they conversed during their memorable summer in Europe.

It is not a work to read through like a many-paged novel. It is a book to dip into at intervals in the original-thinking on the general subject of what farmers can do by collective and co-operative action in relation to everything which pertains to their life and work. Get an idea of what people might do under your particular conditions, for instance. Look into the report and see what other people are doing and what they accomplish

by it. You can find the reference easily, for the volume has a full table of contents and an admirable index which classifies, particularizes and locates, both broadly and minutely.

The proper title of this part of the report is "Senate Document No. 214: Agricultural Co-operation and Rural Credit in Europe: information and Evidence." We trust that every reader of the RURAL PRESS who is following these discussions will at once make application for a copy of this document. Write for it to Senator George C. Perkins or to Senator J. D. Works, Senate Chamber, Washington, D. C. It will be cited continually in public discussions on the subject and it will furnish data for local discussions which all agricultural organizations should institute. It is so large a document that it is not likely to be republished except in its original form, and republication will be in accordance with the demand for it which is brought to attention of the Senate; therefore address your applications to either of the Senators from California, as suggested.

The Observations of the American Commission.

Another installment of the report which was carefully discussed and approved at the Washington meeting is entitled "Observations." It was largely written by President K. L. Butterfield of the Massachusetts Agricultural College, who acted very acceptably and ably as chairman of the American Commission during its European tour. It is a document of 29 quarto pages and will ultimately comprise a chapter of Part II of the Report of the Commission when that shall be completed, some months hence probably. Meantime it will be printed and circulated in connection with the large volume on "Evidence", because it is an effort to draw general conclusions of direct assistance to those who desire to understand, or to undertake local application of, methods of co-operation and rural finance, based upon European practice. In the "Evidence" previously discussed, the fullest details of methods are given, even to the rules, forms, etc., which are in use. In the "Observations" the findings or conclusions are given without details of actual operations. This brief review of 29 pages is therefore a summary of the 1000 pages of evidence, but it is more than that for it makes suggestions as to the applicability of European conceptions and methods to American conditions, and therefore aims to assist all who desire to consider organization of farmers for their own purposes in this country. It is hoped that it may also serve as a true guide to those who desire succinct and available general knowledge on a subject which is attracting such wide public attention. It is probable that it will be published for a much wider circulation than the volume of "Evidence" and yet we hope that very many of our readers will not be content unless they obtain both "Evidence" and "Observations" and will undertake to judge for themselves of the sufficiency and accuracy of the latter. As a guide to efforts at organization one certainly needs both documents. The "Observations" comprise "Senate Document No. 261, American Commission, etc., and application for it should be addressed to the California senators, as named above.

Special Report on Agricultural Credit.

Although the "Evidence" and the "Observations" are as full of rural finance as an egg is of meat, there will be published soon a special report on Agricultural Credit which in part at least will serve two purposes. It will be primarily the report of the U. S. Commission which, as noted last week, is specially charged with exposition of European rural financial systems and their applicability to American conditions. It will also be in part the chapter on rural finance of the report of the American Commission. This U. S. Commission has a dual existence: first it exists for itself and for the present governmental administration which created it; second, it exists as a part of the American Commission, to which all its members belong. Now this U. S. Commission is a sort of agricultural Pooh Bah, for it has official standing with both commissions, not to speak too pointedly of political responsibilities which also rest upon it. We are not objecting to the political eye which the U. S. Commission has hanging out: American farmers have to get things by politics: there is no other way. Therefore, we are hoping that the U. S. Commission has its political eye trained on all political parties and will use all of them—or at least, which ever of them has at any particular moment anything which can be used. Just now, for instance, it is proper for the U. S. Commission to act as the eye-piece through which President Wilson can see his way to act for financial justice to farmers—just as his message, which we quoted last week, declared him to be desirous of doing. This being the case, it is logical to surmise that the report of the U. S. Commission will be shot into the public eye with an accompaniment of braying and kicking and other asinine behavior, whenever the Democratic Donkey concludes that the moment is psychological to arouse the American Congress to do something decent for the American farmer. Nor are we at all objecting to that, either—for if it were the G. O. P. or the T. R. P. which had a chance to do anything in this line we should only have to associate it with the most impressive utterances of other mammals, to emphasize the fact that the American farmer is now in politics for his own sake, while, previously, it would have puzzled anyone to state what, the land's sake, he was in for.

And so it happens that the special report of the Commission on rural finance, written by Dr. John Lee Coulter of Minnesota, will appear later and appear in a way to make the public sit up and take notice. At this moment we do not even know what will be the document number of it. You do not need to watch for it; it will hit you in the eye if you are looking anywhere in the sky when the time comes.

The Future of the American Commission.

There was some discussion at the Washington meeting as to what the American Commission should do when its many-sided report shall be actually completed and submitted to the American people. Shall it naturally expire or shall it merge itself into some other affair (such, for instance, as Mr. Pinchot's "Agricultural Organization Committee") or shall it continue to live to propagate its work in various ways? The prevailing sentiment at the Washington meeting was in favor of the last mentioned course and a committee was appointed to see to the completion of the report and project other work for the organization in the future, or to arrange for its obsequies —if it should be decided to be best to terminate its existence, which now seems very unlikely.

At Home Again.

This writer calls the reader to witness that he has denied himself the pleasure of free writing in order that this letter might present facts with a minimum of adornment or comment. This duty having been discharged and the writer returned to the joys of California residence, future comments on the subject will be undertaken in the usual way.

Queries and Replies.

The Citron of Commerce.

To the Editor: Where can I get a few seeds of the plant producing the candied citron which they sell in stores? Is it a fruit tree or a vine?—R. W., Sebastopol.

The true citron of commerce grows upon an evergreen fruit tree just as an orange does, and budded trees can be had from the nurseries. There is a member of the melon family called the pie melon, which is also called citron in parts of the world where citrus fruits cannot grow, because the rind of it is preserved so that it has some distant resemblance to the true candied rind of the citron fruit. It has no commercial importance.

Avenue Trees in Mountain Valleys.

To the Editor: What would you advise for avenue trees in a mountain valley, 4000 feet high: catalpa, box elder, or something in the evergreen line?—A. D., Cahuilla.

We would prefer deciduous trees—maples, catalpas, box elders, elms, etc. Hardy evergreens at your altitude would probably be pines, firs, etc., which have rather a somber effect when planted along avenues; and then a deciduous tree gives you more sunlight on the road and drier roads during the rainy season.

Interior Prunes on Adobe.

To the Editor: Do you think one can be successful here with prune trees on myrobolan root planted in heavy adobe soil with the water-table within four feet of the surface in summer from irrigation, and slightly lower in winter? Do they take well to adobe soil at all? Here there is a light covering of sediment overlying the adobe.—M. D. W., Biggs.

The conditions which you describe ought to give plenty of prunes from trees on myrobolan root.

Every Farmer Wants This Book

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PACIFIC RURAL PRESS

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The Cost of Frost Fighting.

The Limoneira Company, of Santa Paula, is the most noted of all citrus growers in successful frost-fighting. Assistant Manager Culbertson read a very comprehensive article on "Frost Fighting" at the Fruit Growers' convention, from which the following points on methods and cost of frost prevention with distillate and improved oil burners are taken.

Thoroughness in providing equipment as well as in the work itself was the keynote of success on the Limoneira, and one of the important features is to start firing early enough, as can be judged from the following.

Early Firing. If any one point should be impressed on the mind of him who has an orchard equipped for frost protection, or is contemplating such equipment, it is the supreme importance of firing early. The bitterest memories that linger in our minds in connection with our years of fighting frost are of the nights when, hoping to save a modicum of paltry fuel, we waited a few minutes too long. Every chapter in our experience has borne testimony that once the latent reserve heat becomes exhausted from air, fruit, tree, and surface soil, the task of raising and holding a temperature is not only far more difficult and expensive, but in nearly every case accomplished only after irreparable damage has been done to small fruit especially, and often to the entire crop and tree. If you let the thermometer fall below 30° you are taking the reckless gambler's chance, unless perhaps it be just a short, sudden drop during the last few minutes before surrise. Whether your equipment be heavy or light, we firmly believe it should be brought into action on all occasions if the mercury falls below 31°, and then used just freely enough to keep the temperature above 32°, putting out part of the pots, cutting down the flame, or adding to it, as the case may require.

Handling the Pots.—One important feature which many persons may neglect is the care of the pots in order to have them last as they should. Of this matter Mr. Culbertson says:

Every pot is thoroughly inspected for holes or other defects when taken from the car. It is then dipped in asphaltum paint before sending to the field. This asphaltum paint is a very effective protection against rust. It has been our observation that rust will deteriorate an oil-pot more rapidly than the firings in the orchard, and it is our regular practice, after every siege of firing, be it for one night or a dozen, to send men through the orchard with paint and brush to retouch every spot where the protecting coat has been burned off. The shiny coat of lacquer that covers the pot when it comes from the factory will not last long when exposed to the weather, and we believe it an extremely wasteful practice to allow pots to stand in the field with no other protection.

The making of the asphaltum paint is a simple matter. Heat fifty pounds of broken asphaltum in an iron tub or kettle until thoroughly melted. Remove a safe distance from the fire and stir into it five gallons of stove distillate, being careful that it does not boil over. This will be a little too thick for dipping purposes, but can be diluted to any desired consistence with engine distillate. The cost of dipping each pot is about one cent.

While not recommending any particular pot, we do not hesitate to say that in our opinion the greatest advance step ever made in oil-pot construction has been the introduction within the last year of the "down-draught" tube, either perforated or slit in such a way that an ample supply of air is always available at the surfce of the burning oil. And the positive control of this air-supply means great economy in oil consumption and a cleaner flame, and makes available, if needed, the last heat unit contained in the heavy residue that unavoidably accumulates in the bottom of the pot.

It might be mentioned here that when this pot is new the first attempt to light it will probably result in failure and possibly serious delay, unless a loose wad of excelsior be crowded into the mouth of the tube. This will become saturated with oil and make possible instant ignition. After a little soot has accumulated about the openings, the excelsior may not be necessary.

Cost of Equipment and Operation.—The amount of equipment and expense of frost-fighting properly will vary with location. For the Limoneira, Mr. Culbertson gives the following expense cost for 500 acres, which a person can easily reduce to an acre basis:

50,000 oil-pots (including several thousand of last year's pots)	$50,000.00
2 steel storage tanks, capacity 5000 bbl. each	4,885.89
2 cement reservoirs, capacity 100,000 gal. each, equipped with pump	3,000.00
5 miles of 3 and 4-in. pipe-line	6,375.03
35 tanks, wagons, and trucks	4,315.00
150 spout pails for filling pots	300.00
200 torches	200.00
50 thermometers	150.00
4 miles of telephone system	750.00
350,000 gal. of oil in orchard, at 2½c.	8,750.00
500,000 gal. of oil in storage, at 2½c.	12,500.00
Total	$91,225.92

These figures are almost staggering, yet if ample protection is to be afforded areas annually visited by low temperatures, we believe this is not too high for the average estimate for initial outlay. A ten-acre tract will require about the same investment per acre as a larger area equally cold. On this investment the annual interest, deterioration, and maintenance expenses, aside from any operating expense, is of no small consequence:

6% interest on total investment	$10.94
15% deterioration on $100 worth of pots	15.00
6% deterioration on balance of equipment	2.40
Estimated maintenance—handling, painting, filling, etc.	5.00
Total	$33.34

This is what it will cost us per acre annually just to be prepared, without even once lighting the pots. It may seem like costly insurance, but instead it is a most profitable investment.

It costs more than $500 to grow a car of lemons and put it on the car. From the gross earnings we paid all expenses and a fair dividend to stockholders.

A RECORD WITH CLING PEACHES.

(Continued From Page 577.)

More are taken out every year, though the trees have about reached their final condition as far as this proposition is concerned. The result is five or more long straight leaders to a tree, coming up in broad vase shape, with fruit-bearing wood all along them, the center of the tree being quite open as far as these leaders are concerned, though filled up sufficiently with fruit wood. This gives a fine tree for fruit production, but a tree that needs plenty of support to bear up a heavy crop. The leaders are tied together with ropes, and when the fruit starts to size up, a good many wooden props are used. Of course, a person can afford to prop heavily if heavy crops are going to come, and the argument is rather in favor of heavy bearing and lots of propping in place of pruning to make propping almost unnecessary with somewhat reduced yields. This method of shaping trees also permits them to bear a year sooner than usual. The annual pruning consists mainly in cutting back the new heavy growth on the ends of the leaders, leaving say the stubs of about two of these shoots with half a dozen buds on each. The small growth along the leaders is only kept from getting too long or thick, so that it would interfere, become spindly, or die out. There is enough of this small growth to prevent sunburn and borers absolutely. The annual pruning expense thus is not large.

Other Features.—Thinning, of course, is done, but only enough to prevent the fruits from interfering with each other. Otherwise it is figured that the trees, with fertilizing and irrigation, will be strong enough to bear all the fruit that can set and be vigorous for the next year. The peaches, which are half Tuscans and half Phillips, are sold under a contract at $25 per ton, to measure 2 by 2¼ inches in diameter or better, and there were no undersized ones in the lot of nine tons per acre and most were very much larger. In this yield is included trees where the frost had cut off all the fruit on many branches and a number of re-sets, made necessary through gopher damage the first year.

This is a sandy soil and no plow is used, only a disc harrow and a small spike-toothed one for summer work. The soil is stirred about four inches deep. Other orchard work is along regular lines. The cost of running the orchard is liberally estimated at $100 per acre per year, including taxes, interest on investment, depreciation, water from ditch and pumping, pruning, thinning, fertilization, cultivation, picking, and labor generally. One man could easily do all this except picking and perhaps thinning, and Mr. Schmidt does most of the work except the pruning, which he superintends.

How It Was Done.—Mr. Schmdit was previously not a fruit-grower, but had been in the dairy, creamery, and poultry business. However, he had kept up a reading and observing knowledge of fruit growing, which he supplemented as much as possible by diligent inquiry when he decided to plant the orchard. His success is due to this and to careful attention.

In spite of such wonderful yields from young trees, they never should do worse until genuine old age comes, for the soil is not robbed of mineral plant food, and the heavy coating of leaves that is stirred in during the early winter keeps the soil supplied with vegetable matter and humus. This is the only natural vegetation that can be provided, for summer cultivation is essential, and the ground is too cold in winter here for a cover crop, but it is enough.

Whatever one thinks of the details of the management, the fact remains that what originally was not a superior piece of land has, through the proper soil preparation, good fertilization, and sufficient irrigation, produced one of the finest orchards in California, the poorer spots being brought up to the standard of the best. It has given heavy crops, uniform and frost-resistant crops, the trees are getting more instead of less vigorous, and the things that seem in some ways to cause more labor expense have paid for themselves with increased yield.

BOUGHT FEED FOR PIGS.

To the Editor: Please let me know through the columns of your paper how many hogs can be kept on an acre of alfalfa. Can you also tell me of there is any money to be made on hogs where one has to buy all they consume?—Subscriber, San Jose.

The number of hogs that you can raise on an acre of alfalfa will vary according to the fertility of your soil and the size of the hogs. With sizes ranging from 50 to 150 pounds you should be able to keep from 15 to 20 head, providing, of course, that you have good average yields of alfalfa. While it would be possible for you to raise them on alfalfa alone it would be a great deal more profitable for you to also feed some grain and skim milk in addition if you wish to realize the most from the alfalfa.

The best ration to feed in connection with alfalfa pasture is one-third rolled barley and two-thirds skim milk, soaked and fed night and morning. By feeding in this manner you would very likely be able to keep more to the acre than above mentioned.

If you are able to purchase skim milk or butter milk, and have an alfalfa pasture we would say that you could by purchasing barley be able to realize a profit from hogs, but without the alfalfa or other good forage would consider the undertaking doubtful, unless carried on in a very small way for home pork, where only one or two sows were kept. In that case the scraps and wastes from the place would add enough cheap feed to make your pork cost less than its market value. —J. C. L.

PRODUCTION OF FIG.

To the Editor: Can you tell me what a fig tree ought to produce at five years and at ten years of age, what varieties are the heaviest producers, what is the best soil for them and where it is to be found?—W. D. R., Manteca.

[Statements of what any crop should do are

likely to be very misleading, owing to varying production according to soil, weather, care, and many other factors. Five-year-old trees under favorable situations should produce about half a ton of dried figs per acre; ten-year-old trees, 1½ or 2 tons. For home trees, the best variety is usually the Mission; for borders, the Adriatic; and in block form, in the right places, the Smyrna, though all have friends in orchard form or special locations and purposes. Rather heavy soil is desirable for figs as a rule. From Merced south in the San Joaquin provides suitable climate for Smyrnas, and corresponding locations in the Sacramento. In cooler locations it is likely to ripen too late. Other varieties may do well with less heat units, and some variety or other can be found for almost any fruit section of California.—EDITOR.]

Truck Raising in Citrus Locations.

The unusual usually pays best if conditions are satisfactory for it. That is, oranges will bring a higher profit per acre, growing conditions being the same, in an alfalfa district than where everybody is raising oranges, and alfalfa will be worth more per acre in an orange district than in a dairy district. In a citrus district almost nothing but citrus fruit is grown, so an experience of George E. Waddell, of Exeter, Tulare county, in truck farming should be instructive. It was a new venture, started this summer experimentally in large part, and will reach high development next spring and summer.

Conditions are a little unusual, for the land, which is about six miles northeast of Exeter, though entirely satisfactory for citrus by temperature and otherwise, is largely sediment, and thus more of a truck-farming soil than dry bog or hogwallow which makes the usual citrus location. The water is also within each reaching distance of a centrifugal pump. Up until late spring it was raw land, having in years gone by been grain farmed and in recent years pasture. Water was only on in May, so the truck got a late start.

The owner got the idea that an early frostless location would be as profitable with deciduous fruits as oranges, judging from the results at the Redbanks orchards a number of miles north, and put out a block of Tragedy prunes. The truck farming was done in part between a few rows of these trees, partly on ground given to it entirely. The gardening was done on a share basis with John Slack, an experienced truck farmer, who did all of that kind of work, Mr. Waddell attending to cultivation of orchard and work unrelated to truck farming. The sediment, by the way, varies from a light sandy loam to a quite heavy loam.

Sweet potatoes were grown between the trees, about an acre all together. The yield cannot be given, nor prices, for only part has been dug at time of writing, but the yield has been very heavy owing to rich soil, and quality fine, and price through local sales much above those of regular sweet potato sections. A patch of casabas was planted and the first few almost had to be given away because people were unfamiliar with them. When their nature was known all produced were quickly taken at fine prices by local consumers. Water melons were planted so late that they missed the fancy market, but brought good returns, and hogs are attending to the remainder. Egyptian corn was put in on land leveled too late for truck farming and this corn goes well with late unsold melons as hog feed. In September cabbages were planted from selected seed, and although the heads are small, weighing from 2 to 4 pounds, they are very firm, and this is proving the best investment in the lot.

The proposition is simply this: the favorable location for citrus growing means immunity from late frosts in spring, light though they be, and thus there is a start of several weeks over districts out in the open, for early prices are the ones that bring the biggest returns. Some of the best melon profits in California come from places at the foot of the Sierras in the southern San Joaquin and Sacramento valleys.

Next year, since the land will be in good shape and the ranch in working order, a great increase in business will be done. From temperature records, it is believed that white potatoes can be planted safely in February and water melons are to be planted later on between the rows, so as to get an early start and the first market after Imperial melons.

An interesting point related to citrus locations and frost favoritism is an experimental almond orchard at the Merryman place, a few miles nearer Exeter. This is five years old and five acres in extent and is about the only almond orchard in the citrus district of Tulare county. This was a bad spring for frosts in California, and the crop of the State very small, but it was demonstrated that almonds in a good citrus district will pay like oranges when a crop selling at 17 cents a pound brought $525, with trees of this age.

The citrus district is now becoming recognized as the best place for pomegranates, although these latter must always remain a very unimportant crop. There are on the Merryman place, which is one of the most noted citrus ranches in California, four acres of pomegranates. The fruit from these sold in San Francisco at $300 per acre; that is, gross, not net returns.

TREES FOR BORDER.

To the Editor: I would like to have you give me what information you can regarding the growing of oranges in Stanislaus county, alternating oranges with olives. I am figuring on planting a row of each, or alternating an orange and olive, on both sides of the driveway leading to my ranch, and along on some of the ditch banks. I am figuring also on putting a row of fig trees around the hog lots on the ditch banks and on my boundary line. What figs would you recommend for that location? I am located 1¼ miles west of Hickman on the Tuolumne river. The soil is very sandy, and I receive my water from the main canal of the Turlock irrigation district, and also will have in the next month a pumping plant in addition.—C. G. K., Hickman.

[Using orange trees for borders can hardly be advised under any conditions, much less yours; for the trees to do anything require thorough cultivation and irrigation in just the right time and manner. Possibly you intend to do all this, but more probably not. The Mission olive makes an excellent border tree and evidently is the best thing you can plant. The White Adriatic fig is the most satisfactory fig for the conditions you describe, but if the soil is excessively sandy, even that will not come up to standard. It will do well, however, on good sandy loam, and can probably be fully recommended for your conditions. EDITOR.]

FERTILIZERS FOR ALFALFA.

To the Editor: Will you kindly advise me the correct price to pay for and where to buy phosphorus and potash, also if it is possible to buy the two elements combined? What would be the proper amount to use per acre for the best results on alfalfa?—G. A. G., Lodi.

[You can buy phosphorus and potash fertilizers from any of the large fertilizing companies that advertise in our columns and get the right prices and materials. For alfalfa you will get these two materials in the form of superphosphate for the first and sulphate of potash for the second. For other kinds of fertilizing you might sometimes want other forms of phosphorus, but superphosphate in California is the right form for this element to use on alfalfa. You can buy the superphosphate alone and the sulphate of potash alone, or you can buy them mixed in any proportion you desire. For price we can best give you the estimate of the State Fertilizer Control in Bulletin No. 240, issued last September by the University of California. For every per cent of potash in a ton of material state a price of $1.14. For every per cent of available phosphoric acid derived from rock superphosphate the price is 94 cents. These prices are only approximate and represent the factory price, and do not include cost of preparing for sale, freight, etc., so the price you would pay would be a bit more than this, in all probability, unless fertilizer prices have fallen since the Fertilizer Control made the estimates.

To be more definite as to the cost of each of these: If a ton of sulphate of potash contained 48% potash, the factory price would be approximately 1.14 times 48, or $54.72. If your ton of superphosphate contained 18% available phosphoric acid, it would cost 94 cents times 18, or $16.92, plus packing, freight, selling charges, etc. If the fertilizer contains different amounts of these, you figure the cost from a percentage basis in the same fashion, always remembering the result you will get will be only approximate and below what you will pay.

In regard to selection of fertilizers for alfalfa, no universal rule can be given as to applications of either gypsum, lime, phosphates, or potash. It is largely a matter of type of soil, condition of stand, etc. Would say that half a ton of superphosphate per acre and 250 pounds, or better, a quarter of a ton of sulphate of potash would be the right dose. Try them separately and together to discover results, also leaving unfertilized land to compare growth. In recommending this dosage, we do it because it is better to fertilize alfalfa heavily and seldom than to put on a little dose every year. If you put on one-fourth as much each year for your years, you would not get as good results as from this dose once in four years. You can put on smaller amounts experimentally, but after that, use big doses and wait perhaps until you see that more is needed. Both of the materials you name are real plant foods, heavily used by alfalfa, not merely a tonic like gypsum, and when you buy superphosphate you get a lot of gypsum as a part of it and have its benefits thrown in for god measure.—EDITOR.]

PREVENTING OAK-ROOT FUNGUS.

To the Editor: Would you kindly inform me which is the best way to sterilize the ground where an oak tree was blown out with powder, to prevent a fruit tree which I wish to plant in the same hole from getting oak fungi on the roots? W. H. J., San Francisco.

[You probably cannot sterilize ground where there is oak-root fungus so as to make it perfectly safe to plant a fruit tree on the spot. However, it is usual to take the chances on the notion that oak-root fungus will not start from healthy roots, as the fungus has to be there before fruit trees will get it; so if the oak roots were clean and healthy, a fruit tree can be planted in the place without danger. However, it is best to clean out all roots large enough to see easily and use fresh soil, if possible, right around the roots of the fruit tree at planting. Furthermore, if the roots are removed and alfalfa planted and grown with sufficient moisture for several years, it will use up all fungus in the soil and make tree planting as safe, even if the fungus was there at the start. Other kinds of soil sterilization are impracticable with this disease.—EDITOR.]

GUMMING APRICOTS.

To the Editor: My apricot trees suffer from a gum disease. They are Blenheim apricots growing on a medium sandy loam with 25 feet to water. The gum or sap is running out on the trunk of the trees below the fork. I have asked other growers what the trouble is, and some say it's a borer, and others tell me I have irrigated the trees during hot weather and cooked them. Kindly advise me what to do to get rid of the disease, as the trees are only nine years old and I hate to lose them.—Subscriber, Kingsburg.

[The gumming may have been done from having too little water rather than too much. Possibly, also, it is due to sunburn. Gumming at least is a result of adverse conditions of some kind or other, and many things can cause it. Where there is an outbreak of gum where it can be treated, it is advisable to cleanly remove all unhealthy bark, cutting clean to sound bark and covering the wound with paint or wax to exclude air. If there is danger of sunburn, whitewash wherever sun will strike. Growing conditions with unthrifty trees have, of course, to be made as satisfactory as possible.—EDITOR.]

Rules For Figuring Areas.

To the Editor: I will be glad to do what I can to answer the question on page 508 of your valuable paper concerning the "Rule for Figuring Areas," if you wish. There are several ways, if one angle is a right angle or if you have one or two diagonals. Farmers often step through the "middle" each way. IRVING P. HENNING, Hall Valley, San Jose, Cal.

[Thanks for the suggestion. The explanation is given in a diagram accompanying, which, unfortunately, we cannot reproduce here. A person can approximate the area of a four-sided plot of ground of uneven shape by drawing a diagonal from two opposite corners and then getting the area of the two triangles. The area of each triangle will be found by getting the distance straight across from a corner to the side opposite the corner. This line must meet the side squarely and not on an angle. The length of this line times the length of the side, divided by two, will give the area of the triangle. The area of the two triangles will give the area of the piece. The number of square feet divided by 43,560 will give the acreage. It can be seen that to get accurate measurements is largely a matter for the surveyor; or a surveyor, by knowing length of sides and size of one angle, or length of diagonal, can figure an area to the dot. The above can be used, however, for approximate measurements by anyone on any piece of land with straight sides that can be cut into triangles.—EDITOR.]

CARBIDE REFUSE AS LIME FOR SOIL.

To the Editor: I would like to know if carbide refuse can be used beneficially on vineyard, orchard or alfalfa land. I have quite a pile around an apple tree and it does not seem to hurt the tree or benefit it in any way, as the tree does no better or worse than others a distance from it. Part of my land is sandy loam and part adobe.—J. G., Fresno.

[The lime in carbide refuse is excellent for soil where lime is needed. If used too fresh it may contain some carbide which might injure the roots if turned under at once, but when the refuse is exposed fully to air and moisture for some time all this carbide passes off and the rest is practically like water or air slaked lime. If your soil has enough lime already, more will do little apparent good, as is the case with the apple. If the soil is acid or at all deficient in lime, the carbide refuse will do great good. If your sandy soil has enough lime for plant use and thrift, the lime will probably loosen up the adobe. Alfalfa needs lots of lime and might show appreciation of all the old carbide refuse you have.—EDITOR.]

WHEN TO APPLY FERTILIZER.

To the Editor: I have some fertilizer over after fertilizing my orchard, and as I intend planting some corn and potatoes next spring, I would like to know when you think would be the best time to apply fertilizer on land. The following is the guaranteed analysis of said fertilizer:

	%
Phosphoric acid from bone super..	10.00
Available	8.00
Nitrogen from Organic	2.00
Nitrogen from Nitrate of Soda....	0.50
Potash from Sulphate	7.00

Aptos. SUBSCRIBER.

[For your case we would advise applying the fertilizer when preparing the ground for planting in spring. For trees and vines a fall application might be better with most fertilizers and in fact might be well with you if only potash and phosphoric acid were present. With so much nitrogen and the crop you intend to fertilize not planted yet, you can wait.—EDITOR.]

EUCALYPTUS LUMBER POOR.

Some time ago the PACIFIC RURAL PRESS reported in detail the difficulty experienced by the U. S. Forest Service in making good lumber out of eucalyptus trees. In this regard the Forest Service now supplies the following to the Consular and Trade Reports:

Blue gum (Eucalyptus globulus), which has been grown in California, does not as a rule furnish good lumber, and only from very large selected trees can lumber of even fair quality be obtained. The Forest Service of the U. S. Department of Agriculture has perfected a kiln for drying lumber, in which experiments with eucalyptus have been carried on for the past two years. The results prove that, while occasional selected blue-gum trees of the largest size will furnish lumber of fair quality, the great majority of trees are not suitable for lumber.

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THOS. S. DUANE, Prop.
Martinez, Cal.

Selling a Few Olives.

To the Editor: In the last issue of your paper you speak about olives selling in the San Francisco markets for 7c. per lb., and wonder why shippers send to the commission men when the factories are $150 or more per ton.

For two years I have been trying to get in touch with some factory that would take olives for pickling, or oil, but so far have not succeeded in finding my man. Up to two years ago the local demand here used most of the olives produced, but quite a number have a few trees in bearing now and some have sold as low as 3c. per lb., just to get a little "pin money" while others have not picked their olives at all.

Now if you can refer me to some factory that would use olives for pickling or oil I would consider it a great favor, I have nearly a ton of Nevadillo Blanco olives that are ready for oil, but do not know where to dispose of them.—J. B. T., Ceres.

[Finding a market at good prices is the big problem for the farmer, bigger in lots of cases than raising the produce to sell in the first place. Sorry we have no complete list of olive users and as a matter of fact with olives so much in demand the buyers should advertise their needs. The Ehman Olive Co., Oroville; and Roeding Olive Co., Fresno, are possibly the two leading olive handlers in the Sacramento and San Joaquin valleys. The Sturat Olive Co., Ripon, is the nearest handler to you as far as we know. The Nevadillo Blanco is an oil olive and will have to be sold at a greatly reduced price as compared with pickling olives. Would think that there was a chance for somebody to make some easy money buying olives at three cents a pound, and selling them at eight, which could have been done if the buyer could get enough to make it worth while for the factory to pay full prices. The "middleman" could make a nice prifit out of it.—EDITOR.]

HOW CAN FARMING WOMEN BE HELPED?

David F. Houston, Secretary of Agriculture, will address a letter to the women members of farm households throughout the United States, requesting them to give him full information as to how the Department of Agriculture can best serve the needs of the farm women.

This inquiry results from the receipt of a letter addressed to the Secretary in which the writer said: "The farm woman has been the most neglected factor in the rural problem, and she has been especially neglected by the national Department of Agriculture."

This letter was written not by a woman but by a broad-minded man, so thoroughly in touch with the agricultural and domestic needs of the country that his opinions have great weight. Following the receipt of this letter, the Secretary determined that the best way for the Department to learn how to give these women the fullest possible aid and service which their important place in agricultural production warrants, was to write to the women themselves and ask them to make their own suggestions.

In the letter these women are invited to give individual answers to the letter or to discuss the matter in their church societies or women's organizations, and submit answers representing the combined opinions of the women of their entire communities.

FRUIT AT TEHACHAPI.

To the Editor: It may be of interest to you to know that the Tehachapi valley is going right ahead with development. G. H. Fuller is getting his 40 acres ready for planting to apples and Bartlett pears; Hayward & Hayward will plant 100 acres of their 320-acre tract to winter varieties of apples and Bartlett pears, with currants and Almeria grapes between some of the tree rows. R. C. Ramsey, of Los Angeles, will plant 40 acres of his 240-acre ranch to apples and Bartlett pears. Many small tracts will be planted this season that will swell the total to about double the above, and the Tehachapi valley will have, after this planting, a total of 2400 acres of Bartlett pears and winter varieties of apples. Tehachapi valley Bartletts are picked about October 10 and will keep well into January. C. T. McKINNIE.

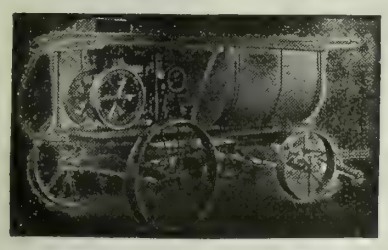
Tehachapi, Cal.

PEANUTS IN CALIFORNIA.

To the Editor: Kindly advise me, through your valuable paper, when to plant peanuts and how to raise them in the field.—Subscriber, Turlock.

Plant, after frost danger is past, like corn or melons, in rows 3 to 4 feet apart and 16 to 20 inches in the row. Cover three to four inches. They should be cultivated about the same as corn, not allowing any weeds to grow in them and keeping the ground loose and mellow, and when the spikes begin to form they should not be disturbed. They require a sandy soil like you have at Turlock and should not be permitted to suffer from lack of moisture, though irrigation should be practiced in a way to prevent the ground from caking around them. There is not much money in peanuts, and it is usually not advisable to make too heavy plantings at first.

HARDIE SPRAYERS



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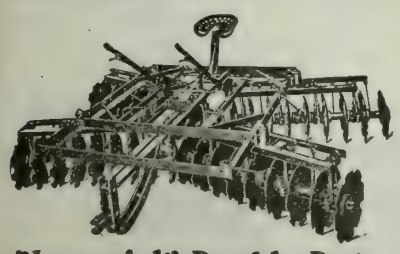

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Killing Morning Glory With Hoes and Vapors.

To the Editor: Will you please tell me how to kill morning glory. My soil is heavy lark loam. I wish to plant alfalfa along the front of my prune orchard, so do not want to use salt to injure the soil. The morning glory is not down through the orchard, but came in from a roadside ditch, evidently neglected.—J. V. H., Campbell.

ANSWER BY J. C. LOOMIS.

Some method of eradicating soil of morning glory, Johnson grass and Bermuda grass has long been sought for in this State, as there are thousands of acres of fine land which have been practically destroyed by some of these weeds.

Those who have once had experience with either of them are always careful afterward to see that not a single plant is growing on their new land as its spread is so rapid that it soon takes the whole ranch.

One of the worst of the three above named is considered by many to be the morning glory and experimenters have been at work for years endeavoring to find some effective methods of getting rid of it.

The most interesting work seen along this line is being carried out in the ranches owned by Driscoll Bros., at Irvington, where a solution called "Nonpariel," containing a large amount of bisulphate of carbon is being successfully used.

There are several acres at Irvington being cleaned up this fall which contain many patches of the weed, varying in size from a few plants to places which are several feet square.

The solution comes in iron drums, being applied with an ordinary one gallon kerosene can.

Each man is supplied with a short handled hoe and a can. He digs a hole three or four inches deep around the root with the hoe. The plant is then cut off and a sufficient amount of the solution poured upon the root to entirely cover the exposed part after which the dirt is pushed back over it and packed down.

Where the ground is thickly covered with plants the labor and material amount to a good deal. We were told that one man can cover 10 square feet in from one to two hours according to the way he works.

Mr. Driscoll considers that if some cheaper method of applying the solution can be found, which is equally as effective, that it will be one of the biggest things for reclaiming weed-infected land yet discovered, as it effects all weeds the same way without damaging the soil so far as known.

[A way of applying the chemical in a furrow from a reservoir on the plow beam was recently described in our columns. It is very probable that the escape of root-killing vapors will occur before the time of sowing another crop, but an experiment is needed to show whether it can be used near to the roots of fruit trees and other plants which must remain in place during the treatment.—EDITOR.]

PROMISING NEW SORGHUM.

To the Editor: I wish to say through your valuable paper that I raised a crop of the new Feterita corn this season which proved to be all O. K. in this section. Feterita is a plant new to this country. It was imported by our government from the deserts of Africa in 1911. This plant belongs to the durra group, and is similar to milo and kaffir except that it has a larger grain, which is round and almost pure white.

Like kaffir and milo, it is drouth resistant to a pronounced degree. In fact, it proved to be more resistant with me than either the milo, kaffir or shallu. The foliage on the Feterita is quite green at this date while the kaffir and other similar corn has been fired for many weeks.

I observed at harvest time that there was almost no dust on the heads. It does not shell off and waste while handling one-tenth as bad as does kaffir. The heads grow erect, are of good size and compact.

In order to prove at least a part of my claims I am sending you under separate cover one head of said corn for you to pass judgment upon.

Kansas grew Feterita first in 1911 at the Fort Hayes Experiment Station. Since then it has been grown in many other parts of the State and is said to have proved to be unusually drouth resistant. This sorghum receives the same treatment as kaffir and matures 30 days earlier. J. J. KEITH.

East Bakersfield.

[The grain is very handsome, white and plump and looks good enough to eat.—EDITOR.]

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and good assortment of other fruit trees.
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2141 East Colorado Street, Pasadena, California.

Interesting Garden Notes.

To the Editor: This season, my neighbor, E. J. Vierra taught me a new way to get rid of ground squirrels and this is the ways he does it. He selects a hole that goes down eighteen inches or two feet, and digs it out in the form of a rough funnel, with the hole in the center of the bottom.

This funnel like hole he fills heaping full of loose dry sand, and the squirrel does the rest. Passing that way in a day or two one will likely see a small depression in the top of the pile of sand. This indicates that the squirrel has entrapped himself.

We tried roselle in the garden. From seven plants we got sufficient buds to make two glasses of beautiful jelly. Glasses the size you pay ten cents for at the store. We did not care particularly for the flavor of the jelly, but it would be useful I think, to mix with fruit that does not form jelly readily. A large number of immature buds were on the plants when the frost came, showing that the season here is too short for it.

Teparies did well, and would have done better, but for the cottontail rabbits which dug under the netting and selected the teparies from among all the plants in the garden, indicating their adaptability I think for forage. I finally got rid of the rabbits by a snare of copper wire hung in the hole, they crawled through coming into the garden.

I also tried out the Quarantino tomato described in these columns last fall by J. S. Phillips of Turlock. I found them to be all that Mr. Phillips claimed for them, showing no disposition to drop their bloom.—W. O. R., Oakley.

East Bakersfield. J. J. KEITH.

CITRON CONFUSION.

To the Editor: Kindly advise me if there is any market on this Coast for citron, sometimes known as pie-melon. I have a great quantity of them on hand at my ranch in Stanislaus county, and no of know one here that uses them nor of any place where they can be marketed. Kindly advise me how expensive it is to cure them, or where this information can be obtained.—Rancher, Stanislaus county.

[You are laboring under the common mistake that the melon is the material of which the citron in fruitcake and such confections is made. The only connection between the two is the name. The melon is not citron; it can perhaps be called citron melon, but, to avoid all confusion, it had better be called pie-melon, which is now the common term in California. The real citron is a relative of the lemon and orange and is the source of the term citrus as applied to that family of trees. Methods of curing the real citron have been described in these columns, but clearly will be of no value to you. There is practically no market for pie-melons, but they are fine for cattle and hogs, which is all the market you need.—ED.]

A RECORD WITH POMELOS.

To the Editor: I enclose a clipping stating that 16 grapefruit, in a single cluster, picked in Contra Costa county, is a world's record. "Honor to whom honor is due" is a good motto, and while the cluster mentioned is certainly a good one, it is by no means a world's record as stated. My people live up San Francisco way, and last Christmas season, when I went up there, I carried with me a grapefruit cluster consisting of twenty-six (26) fruit, all good, perfect specimens. These were literally one cluster because they were all tightly packed on one single stem without side branches or spurs of any kind. The tree producing the cluster is in the orchard of Albert Wabbel, of Lemon Cove, Tulare county, from whom I bought it for 75 cents. These large clusters generally carry a portion of the fruit on short spurs from the main stem, like bunches of grapes, but the 26 were so closely packed on one stem only, that they were really like a solid mass, the inner ones being dented in by the pressure. I kept the bunch about five days in a warm room when it fell apart. A bunch from the same tree, counted today, contains nineteen. W. STUART SMITH.

Lemon Cove, Cal.

SHORT-CUT IN TANK MEASUREMENT.

To the Editor: Noticing in a recent issue an inquiry as to measurement of a cylindrical tank, I venture to send the following "short-cut":

To find capacity of a cylinder in gallons, multiply the square of the diameter in inches by 0.0034, the result will be the contents in gallons to the inch in depth. Thus a tank 60 inches in diameter and 48 inches in height will hold $60 \times 60 = 3600 \times 0.0034 = 12.24$ gallons to inch $\times$ 48 = 587.52.

In case of a flaring tank, square the average diameter and proceed as above.

Simi, Cal. F. E. BAGNALL.

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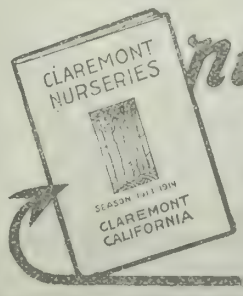

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AGRICULTURAL REVIEW.

Deciduous Fruit Notes.

Deciduous fruit shipments this season amounted to 13,331¾ cars, only a dozen cars less than in 1912. Grape shipments were six cars more than last season. Estimated at $1400 per car, returns amounted to $18,500,000. The fruits shipped were as follows: Cherries, 130¾ cars; apricots, 158¼; peaches, 2359; plums, 1706½; pears, 2495¾; grapes, 6363¼; and miscellaneous, 18½ cars. Prices on everything but peaches were very satisfactory.

The Almond Growers' Exchange is fighting the proposed increase in the minimum on carload shipments of almonds, which it claims would seriously curtail markets or else greatly increase freight costs.

Offers as low as 3¾c for dried peaches have been reported in Fresno county.

Eugene W. Jones, assistant manager of the California Fruit Distributers, has left and will go into business in Kansas City, where he will represent the above organization.

Extensive olive planting is planned south of Huron in Kings county.

Big orders for orchard heaters for use against spring frosts have been given in by Chico fruit-growers.

The walnut crop of California is reported to be moving very rapidly and is expected to be cleaned up nicely soon.

Hayward Reed, the Bartlett pear grower, has purchased the 800-acre Wilcox ranch on Deer creek, Tehama county, and will make large pear plantings. thereon.

Horticultural Commissioner Earle Mills of Butte county has requested the Department of Agriculture to undertake work in selecting a variety of the Mission olive that will ripen early and otherwise be a heavy producer of fine olives.

Horticultural Commissioner A. G. Schulz, of Tulare, in his annual report, gives the following number of trees sold for planting in his county during the past season: Apples, 5976; grape vines, 89,728; figs, 16,326; olives, 50,708; eucalyptus, 12,960; oranges, 300,500; lemons, 13,670; pomelos, 9890; olive cuttings, 91,140; citrus seed bed stock, 372,575.

Roy Bishop, horticultural commissioner of Orange county, has issued a report showing that Orange county products this year were valued at $14,000,000. Oranges, walnuts, lemons, and apricots are the leading fruits; beans, beets, and celery are three of the leading field crops.

Two instructive circulars have been issued by the University of California, one on the spraying of walnut trees for blight and aphis control, which shows that the prospects are bright for the solution of these big problems. The other, by Prof. F. T. Bioletti, gives full instructions on the manufacture of unfermented grape juice.

An apple tree at San Luis Obispo has borne two crops this season, as did a tree at Sacramento.

A Quality Poultry Show.

As usual, the poultry show at Petaluma last week was noted for the quality of the entries rather than the number. About 500 birds were shown, and all of the well known breeds were represented by very high class.

Deserving of particular mention were the Rocks: Barred, White, and Buff; Orpingtons: Black, White, and Buff; Minorcas: Black and White; and, of course, the little white hen that made Petaluma famous. Turkeys, ducks and geese were also well represented, while a rather new departure was a large and fine showing of Belgian and Flemish hares. Judging was completed and awards posted before the opening of the show.

Some special features added interest to the regular exhibits. The Petaluma Chamber of Commerce exhibit included a large American flag made entirely of Colored eggs typifying Petaluma's wave of prosperity. A manufacturer of brooder stoves showed an especially fine bunch of young chicks brooded by the fresh-air system. Enclosed in a large cage in the front of the pavilion was a bit of woodland thickly populated with pheasants, grouse, Mallard duck, quail, doves, and other game birds, while nearby in a flower-decked fountain was a pair of Mandarin ducks, the most beautiful and graceful of the duck family. Perched in a cage over that of the prize turkey gobbler was a fine specimen of American eagle. The shot that broke his pinion evidently broke his fierce spirit as well, for he was seemingly as docile as any of the fowls about him.

In a tent adjoining the pavilion, the leading manufacturers and dealers in poultry foods and supplies vied with the lecturers in posting the visitors on the latest and most improved methods of poultry raising and feeding.

That the poultryman is recognized as being in the automobile-buying class was evidenced by the exhibits of several well known makes of cars.

Irrigation Progress.

The election in the South San Joaquin Irrigation District resulted in the authorization of the sale of bonds below par.

Lake county supervisors have voted to bring an injunction suit to restrain the Yolo County Water Co. from constructing a dam at Clear lake as a part of its irrigation project.

The proposition of irrigating 9,000,000 acres in the great central valley from a canal running from Iron canyon, above Red Bluff, to Bakersfield has again been brought up. The work, if undertaken, would cost $450,000,000.

The Palermo colony has been included in the irrigation district proposed for Butte county, which will thus include about 40,000 acres.

Resolutions from various organizations have been passed calling for the passage by Congress of the Newlands bill for pro-

F. H. WILSON, President.
CHAS. A. CHAMBERS, Secretary.

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For Years

California Fruit Planters have considered our firm one of the Most Reliable Concerns to deal with. Headquarters for

FRUIT Trees—
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Send your list of wants for quotations. Price List and Information Free. Our Stock Guaranteed

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What's in the Soil?

There's nitrogen, phosphoric acid and potash in your soil. Every pound of butter, bushel of wheat, sack of potatoes or bale of hay you produce and ship elsewhere, takes some of these soil elements away. Every horse, cow, sheep or hog that you sell also carries away a certain quantity of these same vital elements. Each crop produced eats up some of the raw materials in the soil.

You must have those raw materials or you can't go on producing. You must replace the vital elements taken away by the crops or live stock, else you get poor crops and no profit for your labor.

Science has discovered how to replace those elements, what to put into the soil to make it continue to produce profitably. It is simply to put back what was taken from it.

In our packing plant we have a by-product called "tankage"—the bones, blood and refuse from slaughtering. The animals consumed the forage from the soil containing these vital elements. When dried, ground and blended in scientific proportion with potash, the result is a fertilizer which again releases the soluble elements in the soil that produce profitable crops.

The materials in "Gold Bear" animal fertilizers are FROM and OF the soil—they go back into it to again do their work as no other materials can do.

In the blending a different formula is used for different needs. Tell us about your soil; what crops you have raised; what crops you want to raise—and we will tell you what formula you should use.

PURE ANIMAL MATTER AMMONIATES
GOLD BEAR FERTILIZERS
FOR CALIFORNIA SOILS

Write for the Fertilizer Book, Free.

Western Meat Company
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CITRUS SEEDBED STOCK

Florida Sour and Pomelo. Large, healthy, and absolutely clean.

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All Burbank's best varieties, including his Standard Prune, Splendor Prune, Pitless Prune, Sugar Prune. Also Imperial, Improved French and Robe de Sargent Prunes, Burbank's Formosa, Santa Rosa, Gaviota and Climax best shipping plums, Vacaville Plum, the first very large blue plum to ripen, fine shipper. President plum, the best of all late plums. Burbank's Plum Cots, a very fine new fruit; also Burbank's Cherry, early Burbank, Early Chapman and all other varieties.

For prices write.

H. A. BASSFORD, Ulates Rancho, Vacaville, Cal.

tection from floods in the Sacramento and San Joaquin valleys.

Much work is being done to make the Internal Waterways Congress, to be held in San Francisco, January 15 to 17, 1914, a success. The idea is to provide cheap transportation by waterways. The subject is closely related to irrigation and storage, as is the Newlands bill.

Secretary of the Interior Land has ordered a public sale of several hundred acres of land within the Umatilla irrigation project, to be held at Hermiston, Oregon, December 27.

Development of more water is to be undertaken in Lassen county by the raising of the dam at Lake Leavitt, which will give three times the present storage capacity and provide more water for Honey Lake valley.

Steps are being taken to organize a large irrigation district south of Redding.

In Nevada a 100,000-acre project is planned for Humboldt county.

Closing the Grape Season.

All records for car prices of grapes were smashed by the recent sale in Mexico City a car of Emperors for $9600 Mexican, or $4800 gold. Big expense was incurred in getting the grapes to the city, so net returns were not exceptional.

Sales of grapes packed in sawdust in drums are reported from the East. Prices have been excellent, about $3 to $4.25 for Emperors. Some of A. B. Humphrey's Tokays brought $4.62 to $5 per drum. Although most of his shipping has been experimental, many carloads were sent out from California this fall.

The Associated Raisin Co., after February 1, 1914, will quote the same prices on both 1912 and 1913 raisins, making quality only the standard. Several improvements in packing and shipping methods are also planned. Raisin shipments were rather small in November, and by December 1st about 34,000 tons of new crop raisins had been shipped, or a total of 60,000 tons. About 11,000 tons of 1912 raisins have also been sold, making a total of 45,000 tons.

Lodi shipped 2082 cars of grapes this season, averaging about $1150 per car and netting a total of $2,394,000.

Citrus Notes.

The returns for the crop year of 1913 of the Orange County Fruit Exchange were $1,103,607.12 from valencias out of total receipts of $1,812,845.50. The importance of valencias in the district has increased greatly, and the price per box was much higher than for anything else except lemons, the former averaging $3.54 and the latter $5.30 per box.

Packing-houses at Riverside are to continue shipments instead of closing until after January 1, as was expected.

Balfour, Guthrie & Co. are expecting to plant 40 acres to valencias at Strathmore, Tulare county.

An oil-stove in the sweat-room of the Zante packing-house, Porterville, exploded recently, damaging about 1500 boxes of oranges.

The orange crop of Tulare county is practically all shipped, and net returns will be about $1 per box.

On the J. E. Adamson place, at Pomona, an acre of orange trees is being covered with cloth as an experiment in frost protection.

Some cuttings and seeds of the new varieties of orange have been sent to this country by A. D. Shamel, who is exploring Brazil in search of new fruits.

Odds and Ends of News.

Tulare lake is practically dry, being only a bed of mud about three miles across. Much planting is going on over land dry enough to plant.

A plan has been set in motion to colonize 20,000 acres of the Cuyama valley, near Maricopa, Kern county.

A Government notice states that the reduced price of eggs has been due mainly to pullets beginning to lay, rather than to price agitation and boycotts. State and federal investigations as to egg prices have been held in various places. A number of imports of eggs are reported at different seaports. One consignment of 26,000 eggs recently arrived at San Francisco from China.

The Oscar Hogin ranch of 3000 acres at Califa, Madera county, has been sold to Los Angeles men and will be subdivided.

A hundred thousand plants are being shipped this season from the U. S. Plant Introduction Garden at Chico.

Approval has been given in the Senate to a bill aiding federal and State agricultural college extension work.

A school of forestry is to be added to the University of California.

A week ago the cotton crop of Imperial valley had been more than half ginned and was estimated at 20,000 bales total yield.

The supervisors of Sonoma county offer prizes for the best products of the county to be exhibited at the 1915 Exposition.

A large acreage in sugar beets has been contracted for in Tulare county.

The U. S. Government has called for a hearing on a potato quarantine which will prevent the importation from Canada and Europe of potatoes on account of the powdery scab and other diseases. If laid, it will cause higher prices in years of short crops.

A new squirrel poisoning ordinance is asked for in Santa Barbara county.

The McLaughlin tract of 13,000 acres of delta lands, north of Tracy, is said to have been sold to Louis Titus.

The International Institute of Agriculture forecasts the wheat crop of the northern hemisphere at 9% more than last year.

Mendocino farmers are planning for a cannery in that county.

ASK FOR SNOW'S GRAFTING WAX. In use all over the State. If your grocer does not have it, send to D. A. Snow, Lincoln Ave., San Jose, Cal.

MISSION OLIVE NURSERY
NATURE GROWN TREES
ONE, TWO AND THREE YEAR OLD
FRED. L. BORUFF, San Fernando, Cal.

GOOD NEWS!
POLLARD BROS. in the market again with FULL STOCK A-1 CITRUS TREES. Be safe—write for catalog and prices and order early.
POLLARD BROS.
SOUTH PASADENA, CAL.

Sempervirens Cactus Farm
JOHN ZUUR, Prop., Santa Rosa, Cal.
Ask for 1914 Catalogue.

How Premium Brand is Selected

The first step in selecting Premium Brand Alfalfa Seed is the inspection of the fields before harvesting by our experts, who accept only weed clear and vigorous stands for contract.

After heading the seed is given two cleanings in the field and is then recleaned in our own improved machines.

The finished pack is the most virile and pure seed on the market—it is worth much more than it costs you to start right. Ask for prices.

200% CROPS
are often obtained by inoculating the seed before planting with
FARMOGERM
It is a thoroughly practical culture of nitrogen gathering bacteria, easily applied, and costs less than $2.00 per acre.
Write for booklet.
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RELIABLE TREES AND VINES

PLANTERS: We are well on with our digging. Stock is turning out the best ever—nice, clean, thrifty trees, with perfect root system. Our new Nursery land in Madera County has proved to be a wonderful success.

We can still supply most varieties of PEACH, APRICOT, PEAR, APPLE, PLUM, PRUNE, FIG, ETC. ETC. Also fine stock of Mission and Manzanillo Olives, Oranges, Lemons, Pomelo, etc., etc.

HEAVY SURPLUS IN No. 1 GRAPE VINES.

Write for catalog.

Kirkman Nurseries — Main Office 2500 Tulare Street — Fresno, Cal.

Keeping a Good Bull.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

That the value of a dairy sire can never be told until his heifer calves start producing is a well established fact, but one that is seldom lived up to on many of our dairies.

It is true that many only consider the need of a bull that they may have fresh cows every year, but there are also a great many who purchase registered bulls that do not keep a bull until his heifers start to milk and that it is a poor practice was recently seen on a dairy where grade and registered Jerseys are kept.

It has always been the practice on this place to keep milk records and as a result the average production of the grade herd is very high.

Three years ago it was decided to purchase a few head of registered females, so a well known breeder was sought out and several head bargained for. As the dairyman had no registered bull at the time the breeder told him he'd throw in a rough looking fellow that he had no use for.

Although the animal was registered, the dairyman thought that anything that a breeder would throw in as a premium must not be much value, but as he could not at that time afford to purchase a bull he bred all of his grade cows as well as his registered ones to him and later disposed of nim for $50 to the butcher.

During the past few months most of the heifers from that bull have come fresh, and all of them are proving to be exceptionally fine producers, in fact a great many of them are going over a pound of fat a day with their first calf, a mark which many do not obtain from higher priced sires until they are several years older.

Since selling the old bull the owner has purchased a younger animal with a good pedigree at a good price, but as he is not certain what the new sire's produce will be he is now wishing he had the proven one instead of the butcher.

Such examples as this clearly show what a big loss there is every year by dairymen who only keep their bulls for one or two years and then sell to the butcher, for a breeder in the hand is worth two in the bush and good bulls like the premium one in this case should be maintained as long as they will breed either by their first owner or by other dairymen who may oftentimes purchase such a bull at a remarkably cheap price.

California needs more prepotent bulls of producing type and it seems a sacrifice to butcher them at four or five years of age.

SOME CALIFORNIA ANGUS.

In response to the request for information regarding herds of Aberdeen Angus cattle in Cattle in California appearing in our issue of December 6, we have received a communication, of which the following is a part:

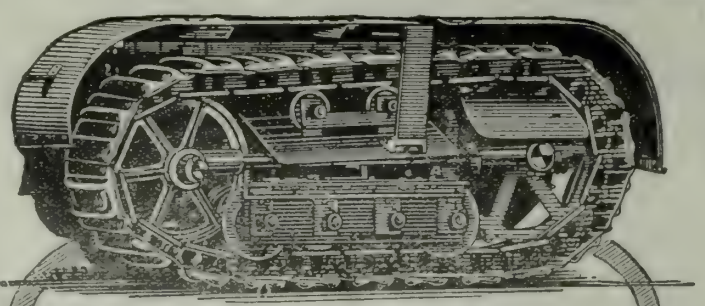
"I have a herd of 50 head of purebred Black Polled Angus cattle, of which all of the older animals are registered, but I have found that the stockmen in this vicinity do not appreciate purebred stock and will not pay a reasonable price for registered animals, consequently I have not kept up my registration for the past three years, although I have nothing but purebred stock. The foundation for my herd came from the herd formerly owned by the late Richard Wilson of Portland, Ore. I have several of his blue ribbon animals and there is probably no better stock of this breed on the coast. That they are not better known is because I have not used your valuable paper in which to make them known to stockmen."
—C. S. Whitcomb, Exeter.

This experience in letting registration lapse because buyers do not pay sufficient attention to purebred stock is paralled by numerous dairymen and swine breeders, as well as breeders of beef cattle in California. It is extremely pleasant to know, however, that stockmen who once owned registered herds but gave up registering young stock, now find the demand so increasing that they have taken up all registrations possible, and are breeding more carefully and going to considerable expense to improving their herds by the addition of high quality purchases. It is to be hoped that our correspondent will find it profitable and necessary to do the same.

It is regrettable that more interest has not been shown in the Aberdeen Angus in California. In nearly every instance we have known where Angus bulls have been used on the ranges they gave fine satisfaction, and several stockmen wished to get more, but would not buy "sight unseen" and did not feel that they could go East to make purchases.

The Polled Angus stands beside the Hereford and Short-horn as a beef breed, and though much less numerically in this country, than either of the other two breeds, has popularity fully in proportion to its numbers. The Grand Champion steer this year and last at the International in Chicago was an Angus, and in fact both in America and England the Polled Angus takes more than its share of such prizes. It will be well if the merits of this breed are recognized in California, so that it can take its place beside the excellent herds of purebred Short-horns and Herefords which California stockmen have established.

Excellent results have been secured with the San Jose free market.



Tractor Durability is Important

Rome was not built in a day; neither are tractors built in six months.

Benjamin Holt invented the CATERPILLAR tractor. For nine years he has been perfecting it, until today it stands unequaled by any tractor built.

It is not an experiment. It is working successfully in loose, soft, sandy or wet soil, in the hills and even in swamps. The

CATERPILLAR
Reg. U.S. Pat. Off.

has no wheels to slip; it lays its own track, rolls over it and picks it up again.

Its traction surface is eight times greater than that of wheel engines. This is the important point in traction engine construction.

Nowadays anyone can buy a good motor, transmission, etc., in the open market. We have both, but we consider traction advantages of first importance.

When you buy a tractor investigate this feature first, then investigate the experience back of the engine and the reliability of the manufacturer.

The Holt CATERPILLAR Gas Tractor is built in two sizes, 60 and 30 H.P.

It burns all the cheaper grades of distillate. Distillate costs less than kerosene.

Fill out coupon and send for our catalogue RP today.

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THE HOLT MANUFACTURING COMPANY

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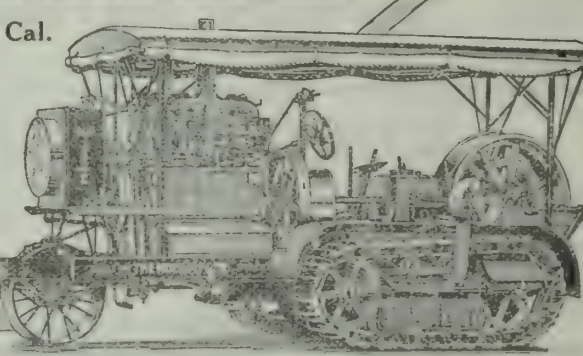

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Correspondence and inspection of stock invited.

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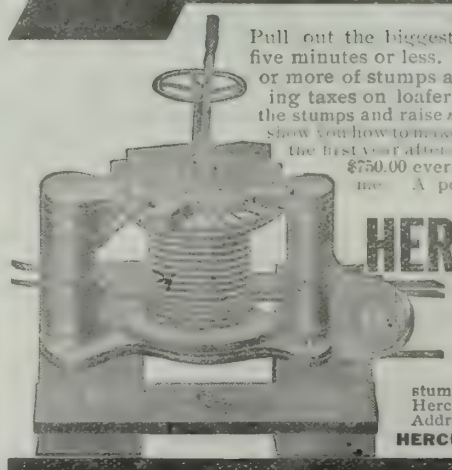

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has the pulling power of a locomotive. It is the only *all steel—triple power* puller made. No stump can resist it. Has many features—self or stump anchoring, double safety ratchets, low down construction—all parts turned and polished for light draft.

Send in your name now for best book published about stump pulling. Shows many fine photos and letters sent in by Hercules owners. My special price will save you a lot of money. Address, B. A. Fuller, President.

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My special price will please you. Hurry up to make sure of this price proposition. Only a few Hercules pullers left at this figure. 30 days trial—3 year guarantee. Any broken casting replaced, within 3 years—whether the breakage was your fault or fault of machine. Write me NOW on a postal.

Call For Horse Breeders' Association.

To the Editor: We are already in receipt of communications from co-workers in favor of the organization of a California Horse Breeders Association, but we realize that we are not as extensively backed as we ought to be.

Now don't sit on your haunches too long admiring the move, but just take your pen and paper in hand and advise us, we have enough workers to make the push.

Understand we are dictating no especial breed, but we are figuring on the draft breeds and are willing to admit any really good horse of every breed will be recognized and when we have such examples in the State the buyer and user will educate you as to what he desires. The mare will be cared for later on; the stallion is the horse to put into prominence.

Do you imagine it is harder to find the good draft gelding now than it was 20 years ago when White King, Snowflake and some horses that Jack Ryder peddled around as well as an odd one or two Skillman placed in this State?

We also have recollections of one year doing some good, but all these animals are now almost entirely lost sight of and the balls of fat that are replacing them are not materializing as much as their predecessors.

Probably it is not every breeder that cares to raise this heavy truck horse, but it does behoove every one to get his fillies infused with the blood that has been already shaped for him in the past decade, and remember that every colt you raise will not become an 1800 pound truck horse. This will have offsets according to the mating of the mare and perchance you will get sufficient misfits to be admirably adapted to your farm pursuits.

This horse business economically conducted should be very differently handled to what it has been in the past, as it is really marvellous to discern the class of horse now being utilized on many ranches.

We maintain that by proper mating no mare older than five should stay on any man's ranch. At this age she is just right for city and contract work and by such time she ought to have raised two or three colts, one of which at least, being a filly, ought to be very soon ready to take her place.

Now you may differ and say she is a great breeder and you will not dispose of her. Now this much we grant, but we don't intend for this rarity to occur. We are willing to show you no mistakes can be made and with the class of stallions we are going to try to infuse into this State's service the daughter will excell the dam, and we now only ask your endorsement and co-operation.—W. M. Bond, Newark.

Possible Horse Benefits.

Above is a letter calling for more volunteers in the organization of a Draft Horse Breeders Association. Throughout the whole State there is dissatisfaction with many branches of draft horse breeding, everywhere a demand for a larger, sounder and better farm or draft horse. Where there is dissatisfaction there is room for improvement, and room for improvement gives the opportunity to any organization that will aid in improvement. If you have any kick about the condition or quality of the draft horse business in California, or the kind of horses produced in California, just write and say where the trouble is and how a draft Horse Breeders Association could help.

Take the matter of the State Stallion Registration Law. It is one of the best steps ever taken to improve the stallion standard in California. There have been complaints that it was not coming up to the possibilities, or to the requirements. Whether it is or not, somebody else has to say, but the dead sure thing about it is that the Stallion Registration Board has had to do everything in sight and we never remember of hearing of any live stock association jumping in with any backing or helpful suggestion, and public support and backing is the greatest help in eforcing any law.

The law as it is written is about as good as could reasonably be desired. One good thing it has done is to draw a clear distinction between the scrub and the purebred. Stallion cards have had to say Mongrel, Crossbred, or whatever term was applicable, if owners could not show registration papers, so bringing to the attention of farmers who have mares to breed that there was a difference between scrub and purebred. That alone is enough to give some enocuragement to the use of well bred horses, benefiting breeders and the quality of the stock raised.

There will be a difference in the amount of good done in other ways by the law according to the way it is enforced. The main part of it relates to the quality of the individual as to soundness as shown by examination of veterinarian. The main intent of the law in fact, was to throw out all animals unfitted by disease or weaknesses to get sound colts. The main trouble with our California horses as the city buyer goes out to get them is unsoundness, rather than lack of size and bone. Throw out the unfit stallion and these unsoundnesses of California horses will largely disappear.

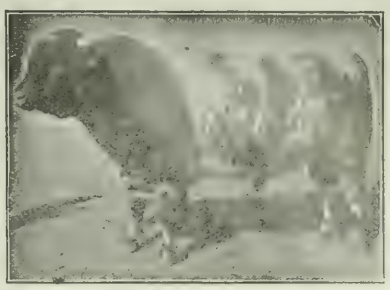
The future Draft Horse Breeders Association can decide whether members are having obliging veterinarians pocket a fat fee only to certify soundness in a horse that is unsound in law, and the Association can make it so hot for breeder and veterinarian that no horses unsound in law will be brought into California and unsound horses already in will have to get out or be no longer stood for service. Enough unsound horses have been debarred for commercial service to do lots of good, but it is a big injustice to the State and to owners of good stallions to have to compete for business against horses which have an official certificate of freedom from transmissable defects when by law they should be debarred. That is bad enough alone, and worse when there is a tax for the protection by law on every sound stallion stood for service.

It is up to the stallion owners of the State through the Draft Horse Breeders Association to see that any changes in the law are made, if any are required, and to see that State officers have every backing to make the law as effective as possible. An individual cannot alone raise a row when he sees something get by the law that should not. With a live association and a good secretary he can bring the matter to the attention of the Stallion Board and no veterinarian or horse breeder is going to get into the limelight for certifying an unsound horse a second time if he can get out of it.

That is just one suggestion of what a Draft Horse Breeders' Association might do, and it would be a great thing for California horses if it would be done. The association could improve the quality of stallions and mares used, could educate users to know what good stock was, make easier selling methods of horses for the city market, and get better prices for same. If any horseman wants to say what else they could do or to say anything about the subject, just say it—the need for an Association is strong enough and the desire for one strong enough, too. We are having a great boom on better livestock of all kinds in California, the draft horse is getting a little of the boom, but he will not get his full share until something is done to help him along. Then he will get ahead faster than any in the bunch.

HILLCREST STOCK FARM

THORNTON S. GLIDE, Prop., Davis, California.



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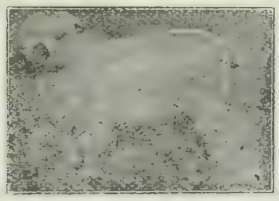
When you buy a stallion, buy a good one. An inferior stallion is dear at any price. High-class stallions and mares always for sale.

HENRY WHEATLEY,
NAPA, CAL.



1st Prize Ram Lamb, Omaha, 1911

San Ramon Shropshire Flock

Purebred and Registered Rams and Ewes
For Sale. Individual or Carload Lots.

PRIZES WON BY FLOCK IN 1912.
CALIFORNIA STATE FAIR, SACRAMENTO—Six firsts, four seconds, champion ram and ewe.
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HEREFORD BULLS

100 Hereford Bull Calves 100

FOR SALE

Single or in Carload Lots

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Improve your herds with pure bred, range raised, Shorthorn Bulls.

Write for prices.

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REDWOOD TANKS

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R. F. WILSON, Stockton, California.

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FENCE
PAINT
Groceries

At Wholesale Prices.
Send for free catalogue and samples. The same goods you are paying double prices for.

Old Hickory Supply Co.
Dept. 3, San Francisco.
Warehouse, Portland and L. A.

With the Live Stock Men.

The McLaughlin Percheron Co. of Oakland reports that Mr. McLaughlin will arrive during the week with his recent importation of Percheron and Belgian stallions which were exhibited at the International at Chicago recently. Included in the bunch are several prize winners at that great show, and he says that he was fortunate in obtaining the best types of draft stallions available in Europe.

According to reports from Portland, the stock exhibited by the California University Farm took 24 prizes at the Pacific International Livestock Show, last week. The seventeen head entered took five championships, seven firsts, ten seconds, and two thirds.

T. E. Craghill, of the West Side of Kings county, reports that the feed in that section is in fine shape since the rains and that the outlook is for a prosperous year among the stockmen.

A report from Winnemucca, Nevada, states that the Paradise Valley Cattle Growers' Protective Association has just paid a reward of $500 for the arrest of cattle thieves in that section.

A new creamery is to be built at Sutter Creek, Amador county, by Mrs. M. E. Tucker of that place.

The sale of dairy cows held on the J. C. F. Dick place, near Modesto, last week, brought out some good prices, the 28 head bringing from $80 to $142.50 per head.

During the past month Miller & Lux have shipped 65 cars of stock cattle from the island country near Stockton to their ranches near Los Banos. They report that the feed on their range land in that district is beginning to be very good.

Louis Pfitzer, State Dairy Inspector, has just finished a trip through Santa Cruz county, where he filed complaints against two dairymen in that section.

Several carloads of Mexican cattle have been received by Harden and Asbill, at Oakdale, during the past week. Although considerably smaller than California bred stuff, it is thought that they will put on weight fast enough to make them profitable feeders.

The city council of Hanford has appointed H. Greenhaigh city milk inspector for that city.

According to County Veterinarian O. A. Longley, Fresno county now leads the State in the general health of live stock of all kinds.

From present indications the sheepmen of Nevada have been hard hit by the free wool schedule of the new tariff bill. Wool is now selling at 14c, but as Nevada wool is subject to a heavy shrinkage, the price for the Nevada product is much lower. Last year wethers sold for $4.50, while this year the best price obtainable is $3. Recently the offers have been reduced to $2.65, which is a tremendous shrinkage and one which will prove a hard blow to the sheep industry.

Two grade Jerseys belonging to J. C. Galloway, of Modesto, have recently made very fair records, one having produced 314 lbs. of butter-fat and the other 319.6 lbs. in the year.

The stockmen of Nevada have entered a protest against what they claim is unjust system of the taxing of live stock in that State.

A new volume of the Register of Merit has just been issued by the American Jersey Cattle Club giving the records of 1317 cows and 77 bulls, also lists of 982 sires with their register of merit daughters to date. The volume of 560 pages may be had for 25c from the secretary at 324 West 23rd street, New York.

A new firm known as the Hayes & Devaney Co. has been organized at Livermore during the past week. This new firm will raise and deal extensively in beef cattle, both in the local field and in the selling of Arizona and Mexico cattle.

Dr. H. Horndorn, of Glenn county, is planning on making a trip into Mexico to bring out 500 head of cattle owned by a San Francisco man who is fearful that his stock will be killed by the rebels.

The report of the Sacramento health board shows that for the month of November the quality of milk received in that city for the city milk supply was below the quality of milk received during the month previous.

The Alpine Evaporated Cream Co., of Hollister, is suing the Southern Pacific Co. for damages sustained not along ago at its plant through fire said to have originated on the railroad's property, later spreading to the milk plant.

The Bennett ranch, near Tulare, formerly run as a dairy by J. V. Clifford, has been sold to L. M. Houghton, of Pasadena. The price paid was $175 per acre.

A firm in Stockton is planning on handling certified milk produced at the University Farm at Davis.

A. B. Morrison has asked that the Chicago Butter and Egg Board and the Elgin Butter and Egg Board be dissolved, claiming that the two organizations are working together, thereby affecting the wholesale prices in central and western States.

Arrangements have already practically been completed by which the breeders of pure-bred live stock will concentrate their shipments at the American Royal Live Stock Show at Kansas City in 1915 for delivery at San Francisco. Other arrangements of a like nature have been practically completed in other cities and territories.

W. M. Carruthers, the live stock commissioner, has returned from a trip East, bringing four carloads of stock for California stockmen. Among the animals are quite a number obtained at the International. The stock include six registered Ayrshire cows for Selah Chamberlain of San Mateo county; six registered Holsteins for C. A. Thayer of Willits; a car of registered Shropshire rams for Miller & Lux; two registered Short-horn heifers for Jack London, Glen Ellen, and two for Senator Fulton of San Mateo county; ten registered Shropshire ewes and rams for Mayor Rolph of San Francisco; 32 grade Holstein cows for J. Hartje of Woodbridge. The grand champion Chester White sow was secured for Bruce Cornwall, Scott's Valley, also the second prize boar of that breed. A Hereford bull sired by Perfection Fairfax was purchased for William Clark of Ferndale. Some other stock will be brought out later.

George F. Kendall, the Jersey breeder near Hughson, Stanislaus county, reports that several head of his cows that are on official test will make the Register of Merit from present indications.

An extra good class of cattle were handled all last week at the Portland Union Stock Yards, top steers going at $8. Nearly 4000 head of hogs were received on the opening day of the week, tops going at 8c, which remained the standard price for the rest of the week, the outlook remaining steady. Both in numbers and price, sheep were strong and the outlook continues firm. The extreme price in the lamb market was $6.25 for tops.

The California branch of the American Poultry Association met in annual convention recently in San Francisco, planning for entertainment and other poultry work at the 1915 exposition. The following officers were elected: L. C. Bryce, Petaluma, president; C. G. Hinds, Oakland, first vice-president; R. J. Venn, Fresno, second vice-president; H. W. Kruckeberg, Los Angeles, secretary; M. E. Dillingham, San Gabriel, treasurer; executive committee, Charles R. Harker, San Jose; W. S. Macy, Santa Barbara; Ben N. Woodhull, Stockton; L. N. Cobbledick, Oakland; Joseph E. Davis, Los Angeles.

The Porterville Poultry Association has been organized, with W. A. Holden president and E. D. Fawcett secretary and treasurer.

DAIRY CATTLE.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

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CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

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REG. GUERNSEY CATTLE and Hampshire hogs, young stock for sale. Bella Vista Stock Farm, First Nat'l. Bank Bldg., Berkeley.

FOR SALE—35 head of registered and grade Jersey dairy cattle. Inquire of H. V. Traynham, College City, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain, Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal

K. W. ABBOTT offers six registered Holstein heifers for sale. Milpitas, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

BLACK POLLED ANGUS, ten yearling bulls, entitled to registration. I have nothing but thoroughbred stock. C. S. Whitcomb, Exeter, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd O. Harris & Sons, Harris, Mo.

SWINE.

A WHOLE H-O-G OR NONE. FOR SALE—Two of the best splendidly built and marked young registered Poland-China boars; one 18 months old, the other 6 months. If you are interested and want something good, write for particulars, photos and prices. Rough's Greenfields, W. H. Rough, Prop., Arlington, Riverside county, Cal.

POLAND-CHINAS FOR SALE—Still have six 8-month-old males and five 8-month gilts for sale. Two of these gilts first prize winners at the Fair this year; as well bred and as nice as are in the State. W. A. Young, Lodi, Cal.

REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno P. Daggs, Modesto, Cal.

EUCALYPTUS STOCK FARM—Registered Duroc Swine and Holsteins; prices right. A fine March bull calf for sale. J. K. Fraser, Denair, Cal.

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REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

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REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Mgr.

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DUROCS from first prize winners State Fair $10.00 up. Ed E. Johnson, Turlock, Cal.

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FOR SALE OR TRADE—Registered Missouri jack, 5 years, 15.3 hands, sound, big and heavy boned; good colts to show. Want work stock, horses or mules. Address, Linden Stock Farm, Linden, Cal.

FOR SALE—Bay Percheron stud colt, coming 2-year-old out of 2000-lb. horse and 1800-lb. mare; weighs 1600. Price low. Address Box 1819, Pacific Rural Press.

PUREBRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

BIG BONED BREEDING JACKS for sale. Jas W McCord, Hanford

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AIREDALE TERRIERS, the farmer, stock raiser and hunters' friend. Puppies from $10 up. Dromore Kennels, Vallejo, Cal.

FOR SALE—Purebred Berkshire pigs, Toulouse geese and Pekin drakes. L. R. McCoy, R. 1, Box 205, Stockton, Cal.

FOR SALE—Bargain. Registered Guernsey bull. Young registered Berkshire boar. K. L. Evans, Gilroy, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

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S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.

Veterinary Questions.

A CASE OF FOUNDER.

To the Editor: I have a very fine mare, weighs over 1600 pounds, seven years old, that is in a deplorable condition. When she first starts off she is very stiff, places her front feet away forward and starts with much difficulty, but gets better after going some distance. She is always in splendid condition otherwise. She had a colt two years ago, but fails to get in foal since. She has been going wrong for over a year. I have consulted two regular licensed veterinarians and they both differ in opinion as to what ails her. If you could tell me what is the matter with her and what to do for it I would be very thankful for your kindness.

I am a constant reader of your paper and find it very valuable, especially the market reports.—J. H. D., Watsonville.

ANSWER BY DR. CHAS. C. WING.

The mare mentioned shows the symtoms of lamanitis (founder) which can be caused by several things, one of which is retention of the afterbirth. If you can remember whether she had any difficulty with parturition the last time, and if this stiffness came on shortly afterwards the cause then lies in the uterus itself and would account for her not becoming impregnated thereafter. If on the other hand there was no trouble before, have the mare "opened" by some one who knows how, the next time she is bred.

Is there any discharge from the vagina containing pus?

THOSE ATROPIED JAW MUSCLES.

To the Editor: Dr. Creely wanted to know more about the horse with atrophied muscles of the jaw and here it is.

I bought the horse in San Francisco a year ago, and before buying him I had him examined by one of Dr. Creely's assistants. I took him down to Kingsburg in a box car and after having him a month I noticed that he ate poorly, so I took him to a veterinary to have his teeth examined. He told me his teeth were all right, but that he suffered from facial paralysis and that the muscles on the side of his face had shrunk so badly that he could not eat hay very well. He gave me some blister to rub on the sides of his face to bring the blood back.

The horse improved a little, but he is not well, eats hay slowly and always looking for alfalfa leaves and easy chewed hay. Kindly advise me how to treat him. —Subscriber, Kingsburg.

ANSWER BY DR. CHAS. C. WING.

Facial paralysis is caused by an injury to the nerve along the superior cheek and is common when horses are shipped owing to the motion of the cars.

Liniment applied to the sides of the face are indicated to be rubbed in well, feed good hay with lots of nutriment and moisten with warm salt water before feeding. It would be better if possible to steam the hay.

San Francisco Veterinary College.

RUPTURE IN MARE.

To the Editor: I will aprreciate very much if you could give some hints of what can be done with the mare shown in the accompanying picture. At delivery time last April the mare was in pain over 24 hours, and had to be delivered by force. A few hours after the pain started a swelling commenced at the udder reaching to the breast at the end of the day, and gradually resuming itself in the two big pockets of dough consistency as it is now. They don't seem to hurt only they interfere some with the movement of the legs. The mare keeps in good condition as can be seen. Could they be lanced or treated? —L. K., Needles.

ANSWER BY DR. CHAS. C. WING.

The mare has a double hernia (rupture) caused at the time of pasturition. In both of these swellings there is contained folds of the intestines. To remove these requires a surgical operation which in the horse is a very dangerous undertaking owing to the susceptibility of the equine to peritonitis. Again on account of the size the operation would be impossible as the animal would strain and tear out the stitches and disembowel itself.

CURE FOR FISTULA.

To the Editor: I have a mare shod that had blood poison in a hind ankle several years ago, which left a bunch about six inches in diameter over the ankle and extending half way to the hock, about half the time a fluid—sometimes thin and odorless and at times thick and bad-smelling—comes from this bunch. Will you inform me through the columns of your paper whether this can be reduced in size and healed, and if so, how to do it?—W. L. B., Modesto.

ANSWER BY DR. CHAS. C. WING.

This enlargement is due to inflammation, and is of a fibrous nature with a fistula discharging either from the joint or tendon sheath either of which contain a lubricating fluid for the aforementioned. The discharge will have to be stopped before the enlargement can be removed. If this had been taken care of when it first happened the animal would in all probability be well today. Cleanse wound thoroughly and inject Churchill's Tincture of Iodine once daily, also paint enlargement with the Iodine daily until it blisters the skin, then stop for a few days and continue as before.

San Francisco Veterinary College.

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Saving Alfalfa Hay on the Dairy.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

With alfalfa hay at its present high price it takes considerable courage to refuse to sell it to the hay buyer and feed it to the dairy cow instead, but it is in the long run the most profitable thing to do if one has high grade cows.

Dairymen are also often tempted to cut down on the ration when hay prices are soaring, but this is without question a very poor practice; however, there are oftentimes conditions that one can take advantage of by which the hay ration may be reduced and no serious effects be felt at the milk-pail.

An instance of this was seen on a dairy in Stanislaus county recently where a herd of 42 cows had been maintained without alfalfa hay for six weeks on feed which is generally considered waste on most places.

This was done by soiling the green alfalfa on 60 acres which was the growth of the fields after the season had advanced too far to allow curing it for hay.

There has always been a feeling that freshly cut alfalfa was apt to cause bloat, the same as alfalfa pasture, which is no doubt the reason that more dairymen do not make any use of this last growth of alfalfa, but on this dairy bloat has never caused any trouble and the only ill effect noticeable on the herd is that they seemed to have run down somewhat and looked rough, due to the fact that they scour badly on the green field.

Whether this will have any effect on the production later is not known, but milk records have been kept for the entire herd and so far the production has maintained as high an average as it was on the alfalfa hay ration.

The practice is to cut every other day and haul in every day, that is, enough alfalfa is mowed at one time to last two days in the feed lot where it is fed in long mangers along the sides of the corrals.

To yard against bloating at first the cows were given a big feed of dry hay before they were turned into the corral to the green alfalfa, but since then no precaution has been taken, and they are allowed to eat as much of it as they care for.

The owner suggested that it would perhaps be better to feed a small amount of hay daily as that would act as a preventative for the scours which seemed to be the main drawback to the practice.

Not only is it fed to the milch cows, but also to the young stock and to the hogs, the latter named doing especially well on it in connection with milk and grain.

Although there is nothing new about the practice of soiling, it is not generally practiced during November and December, when it can be done without other cost than that of labor while if done at other times of the year it cuts into the alfalfa hay tonnage.

The dairyman who owns this ranch stated that this is the second winter he has fed in this manner, having soiled all during November and December last year.

The hay, which would ordinarily be fed at that time of the year, was sold this year at $10 a ton loose on the ranch which demonstrates that brains are as profitable on the dairy as elsewhere.

ENTRIES FOR JERSEY FUTURITY.

Notice was given in these columns recently of a Jersey Futurity Contest to be started by the California Jersey Breeders' Association. The entries for Stake No. 1 had to be in by December 1, and the following list of owners, number of entries, and the names of their sires was entered with the secretary, J. E. Thorpe, of Stockton:

G. O. Hillier, Modesto, two entries, sired by King Polo of Bleakhouse; R. L. Waltz, Hanford, one entry, sired by Ruth's Golden Glory; J. B. and J. E. Thorpe, Stockton, two entries, sired by Sonny St. Hillier; G. H. Miller, Modesto, two entries, sired by Altama's Interest; L. J. Dobler, Turlock, two entries, sired by Turlock Signal; N. H. Locke Co., Lockeford, two entries, sired by Grace's Fox of Venedera, one sired by Borello's Golden Laddie, and four by King's valet; W. J. Hackett, Ceres, four entries, sired by Lady Billie's Marigold; Elledge and Andrus, Monolith, two entries, sired by Gertie's Golden Jolly and one by Browney's Chief; Jas. A. Goodall, Turlock, one entry, sired by Gertie's Ideal Son; X. Carrithers, Tulare, two entries, sired by Gertie's Lad; C. D. Hayworth, Modesto, two entries, sired by Diplomas Bijou Boy; T. B. Purvine, Petaluma, two entries, sired by Raleigh's Fairy Boy 4th.

As this is the first undertaking of this kind on the Coast, much interest is being taken by the breeders, and the first awards, which will take place at the State Fair next year, will be eagerly watched for, as it is expected that there will be keen competition.

DRYING A COW.

To the Editor: I would like to get advice through your paper in regard to drying up a milch cow. Some people told me that it is better to milk a cow until the last day before she is fresh, and some say to dry her up four or five weeks. I would like to have your opinion about it.—Subscriber, Ontario.

[It is certainly advisable to dry up a cow for a time before freshening. A month or six weeks is about the proper period of rest. Some cows, of course, refuse to dry and then one has to make the best of it. With cows of beef or dual purpose breeds that have no natural tendency toward heavy milking, who of their own accord wish to dry early, it is often advisable to keep them milking strong as long as possible, though even there a slight rest is good. A heifer of such tendencies should especially be kept milking as long as possible, but a cow of a straight dairy breed, first calf or not, will not be injured, but helped, by being dry a few weeks before calving.—EDITOR.]

The State of Washington has just obtained a new law regulating the commission business.

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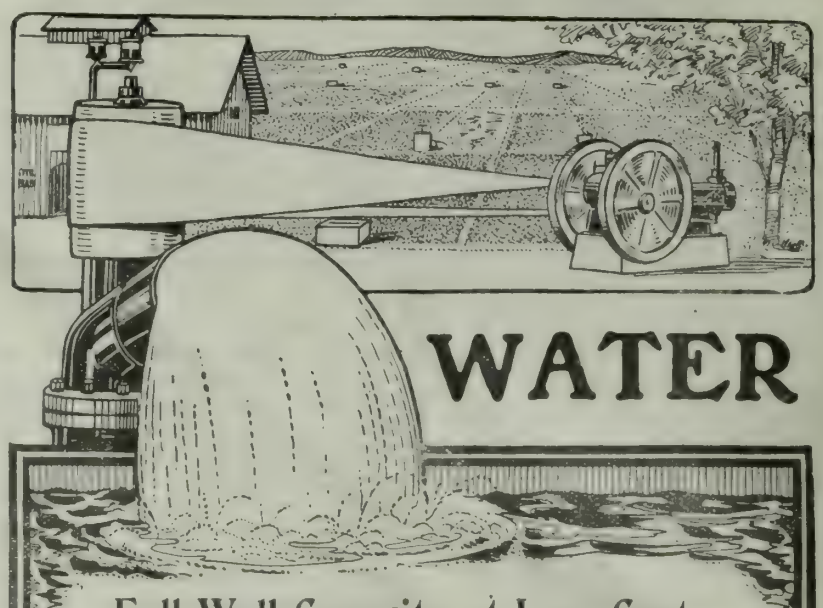
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A Dairyman's Piggery.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Making money out of hogs when only sows and boars too old to breed are sold to the butcher may seem a little strange when it is known that nothing but the boars are purebred and although the sows are highly bred the pigs are not elegible to registry.

Although unusual, this is being done on a dairy ranch in the San Joaquin valley where a pig business has been built up to a point where the litters are sold as soon as weaned at from $2.50 to $3 apiece as soon as they are weaned, which is usually when they are five or six weeks old.

Having a good sized dairy, the owner of the ranch found several years ago that the skim milk was worth considerable when fed to hogs, but as he did not raise any grain or fattening feed, and as he did not care to keep hogs other than for a market for skim milk, he purchased some fairly well bred gilts and a purebred boar and started what might be termed a "piggery."

When the first litters came on he had different neighbors stop in and look at them and offer them for sale at $2.50 apiece. There were a few left on his hands which he afterward sold to the butcher, but in a short time his trade built up after it was found that the stock were good feeders on account of being highly bred.

From time to time new gilts were selected from the litters to afterwards replace those sows which became too old and new boars have been purchased as occasion demanded with the result that each year the standard has been raised and the market has become broader as a result, for by purchasing such pigs it has been found that they were of marketable age much sooner than the scrubs.

As the market became broader and as only so many breed sows could be kept. the question of more production became apparent and to get this, sows which farrowed small litters were disposed of and only those with large uniform litters were kept and in that way the yearly production as well as revenue has been materially increased.

The sows are bred to farrow twice a year which makes an average of about 15 pigs a year of each sow or an average return of from $37.50 to $45 a year per sow.

Although skim milk is the principal feed, some grain is used and a small field of alfalfa for pasture is turned over to the hogs to run on.

Tests are made at different times and by selling the pigs in this way when the grain and alfalfa were figured at actual cost, the skim milk has been valued as high as 65c. a hundred and never lower than 45c., the difference varying acccording to the pigs.

This not only shows what can be done when one does not care to spend the time necessary to fatten and finish pigs for the market, but also shows that farmers appreciate the well-bred hog after they have handled him a while, even though they consider that they are unable to pay a good price for a purebred boar.

The truth of the matter is that every one of this man's customers should be raising his own pigs from well-bred sows and a purebred boar, for if this man can do it and make money why shouldn't his neighbors?

While the purebred dairy sire is becoming more generally recognized, it seems that there is still room for an awakening of dairymen to the value of better bred hogs.

PASTURE FOR PONIES.

To the Editor: Cows are pastured in this locality for 50c. per month per head, and horses for $1. Will you kindly let me know through your columns what would be a fair rate in comparison with the above for Shetland ponies?—M. W., Cool.

[If any of our readers wish to give a scientific answer to the above, we will be glad to have them take the job off our hands. As it is, the charges of cows vs. horses doesn't look to be very accurate provided the amount of food consumed is the rule to go by. If the latter is the rule and horse pasturage is the basis charge, a Shetland pony ought to cost about 50c. per month for easy figuring, as the amount of food an animal of any variety will consume is generally considered proportionate to its weight. We don't feel capable of venturing further into this problem, but will let others do so if they wish.—EDITOR.]

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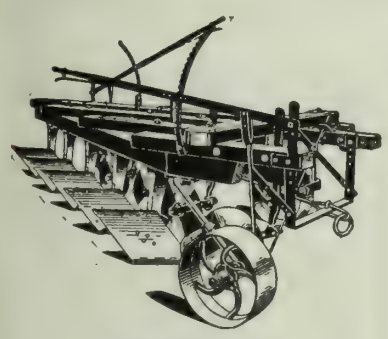

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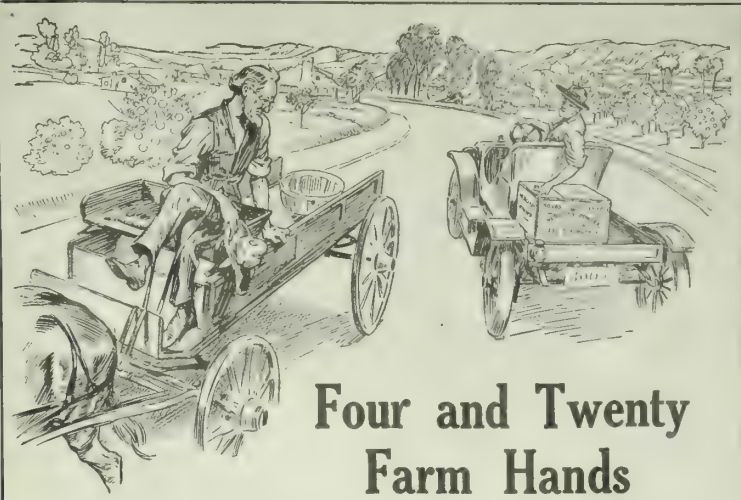

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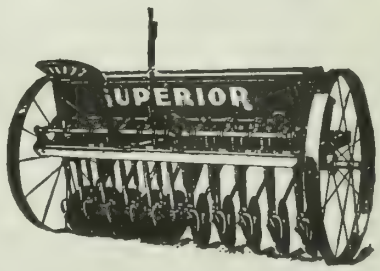

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International Poultry Standards.

[Written for the PACIFIC RURAL PRESS by Mrs. SUSAN SWAYSGOOD.]

The real need of an international standard, at least among English speaking nations, was never so strong as now. English speaking races are natural born fanciers, and why there should be separate standards for each nation has been a puzzle to me for many years. But so it is, England has one standard, America another, and Australia steps up with an ideal all her own; Canadians incline a little more towards our standard because they exhibit on this side, still in many of their advertisements they don't fail to say "imported", which means their stock is from England.

Not long ago I read an article written in bucolic style by a man old enough to see the folly of a one-sided policy, but he evidently did not, for he berated the English in great shape for sending us the Orpingtons, saying we had no need for their new breeds, the old American breeds were good enough. Of course, he forgot that we had sent the American breeds over there as a sort of reciprocity. The Barred Rocks, Wyandottes, and perhaps the R. I. Reds by this time have found great favor in the old country, but as their ideals differ a little from ours, it is only reasonable to suppose that the standard for them will be a little different than that of the original stock.

The fact that so many birds exchange hands on all sides from all these countries is proof that we should have one standard for all. Owing to climatic conditions English breeders have been able to make wonderful progress in color and in many cases it is necessary to send over there for new blood to transmit the color, but when we get the color, we get a little difference in type or shape that takes one or two generations to breed out, so what we gain one way we lose another. If a judge finds a bird of ideal color he hates to have to cut it for some other defect, but this he must do if it does not conform to the standard.

Some of the Eastern poultry journals are advocating that some such law be made for the Panama Pacific International Poultry Show, but that would work an injustice to the breeders of all nations, because the time is too short for any such law or rule to be bred to. It would take at least five years to get anywhere, for each nation would have to both "give and take", so to speak, and we all know that a man's idea of what is "best" changes slowly until he can see good reasons for changing. Anyway, the Panama Exposition will be a good time for the national poultry associations to get together and try their hand at organizing an international association that will have the power to make our "Standards" for all nations one.

This can only be done by each country submitting their individual standards to an International Federation for its approbation, and whatever they decide to be right after modification and probably elimination of some features, allowing for difference in race, let that standard be the one for judges to go by.

SOME POULTRY PROBLEMS SOLVED.—Back in the old days when the wife wanted a chicken for dinner, the man of the house would look up his shot gun and make as much fuss as if he were going on a hunting expedition of several days, whereas he only means to go out and scare all the cattle, horses and any other animals within hearing with the noise of a gun. And then when he brought in his game, minus head, how he strutted around so that mother would duly recognize the importance of having a man around that was a good shot. I remember that some of my boys after performing a feat felt as if they were entitled to a day's holiday, or at least to say in and watch the journey of that chicken as it went through the various mysteries of the culinary art and reached the table covered with gravy. But most of us have solved that problem by yarding the chickens so that they no longer have to be hunted like wild game. Mine will even come and eat out of my hand so that killing one almost makes me feel like a murderer. So my plan is rather a failure, but one man I hear has solved the problem of catching the birds he wants with very little trouble.

SELECTING BROILERS FOR MARKET.—When it is necessary to get into a flock of say 500 or more to select one or two shipments of the fittest there must be some easy plan or it is quite a chore, besides upsetting the rest of the flock. So this man solves the problem by placing his shipping crate in the entrance, or rather to an opening in a door which leads towards where the chickens are fed.

Now this crate, on the side the chickens enter is stripped of the slats and the feed placed in the coop. When the coop is filled, the door is shut and on the other side the slats are set so far apart that the smaller broilers can pass right through and those he wants cannot get out. The coop is then drawn away from the opening, the slats replaced, and if the proper number for shipment are not in, more are taken from the next coop that is filled in the same manner. The smaller ones are then put back in their feeding place and all goes on as before. Selecting broilers is often quite a task, and I have known people who have weighed every one, but by this plan all this extra work is eliminated and the chicks are not worried as is the case when a person goes to catching them.

This same plan could be made to work with turkeys and nearly all kinds of poultry, as each one can devise his own coop according to size of stock ke keeps.

REDUCING LABOR.—In nearly every case where a large poultry plant makes a failure it is because of the cost of labor. Not very many men are able to adapt themselves to the work of raising chickens, and if a plant happens to get hold of a few men who do not like the work, or think it beneath them they soon run a margin between the profit and loss.

One time when visiting a big poultry ranch in Petaluma I saw a man go half a block to catch a little chick that had gone astray. In conversation with the proprietor as to wages he paid he said, "each man according to his value to me; such a man as that you saw go out of his way to save a chick being lost is priceless, I give him all I can possibly afford while there are men I would not give a dollar a day except to the dirty work that must be done."

So that it is the wisest course to have labor saving tools and keep only men that are somewhat interested in poultry.

WATERING METHODS.—The watering of a large flock is often quite a problem that on some plants never is solved right. Running water right from one house to another is the easiest way out, but if disease ever gets a footing in pen one and the water is carried through, the lower pens very rarely ever escape. So it is really cheaper and better to have each pen watered separately. Then if some disease should attack one pen, it can be met and vanquished right where it started. Once the pipes are laid we are practically done with that work, in our climate, while in countries where it freezes the work has often to be done over as the pipes get bursted with the frost. By having a pipe line and separate faucets the watering of even a thousand or two chickens need not be much of a chore. A man can go along with a short handle mop, wash around each drinking vessel and fill it up from the faucet in an inconceivably short time.

In the matter of feeding the same economy of labor can be practiced: have the feed hoppers so arranged that they are easy to get at, and a man can do a lot of feeding in an hour, where if he has to go over a circuitous route to feed every other lot of fowls it takes time and energy that the owner must pay for, and for which he gets no return.

This same economy of labor can be

POULTRY.

SACRIFICE SALE—On account my immediate removal East will sell at very low prices my entire line of thoroughbred White Orpingtons, including my foundation stock and some grand young cockerels and pullets. Write at once for particulars, stating your wants. E. A. Jackson, Oroville, Cal.

HURRAH FOR 1914—We will be right on the job with better chicks and hatching eggs than ever, from better stock than ever. Write for prices and particulars. Model Poultry Farm, White Leghorn Specialists. W. C. Smith, Prop., Corning, Cal.

SEND TODAY FOR FREE 64-PAGE CATALOG, describes in detail, chicks, hatching eggs, hens, pullets, cocks, cockerels, etc. We ship everywhere. Write us your wants. Pioneer Hatchery, 112 East 8th, Los Angeles, Cal.

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require a good tonic and conditioner to keep them in health and get them laying again quickly.

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carried to every department of the poultry business, and it can be used by the small breeder as well as the large breeder and by the average farmer as well as the large poultry plant, and farmers above all should try to economize time and labor so that their children can have some time to spend on their own hobbies. Hobbies are the salvation of the race, and should be especially humored on the farm to relieve the monotony, so called, for actually and really I could never see anything monotonous in the farm work, and I have done a lot of it. But I will say that the monotony comes in when a man or woman is obliged to perform certain chores at stated times whether they want to or not.

In a case of this kind it is well to remember that men were made before rules, and a rule that can't be broken once in a while or at least stretched a little ought to have no place on a farm.

A woman that can't keep her husband and children good natured, even while being handed a cold lunch, for a change, needs to learn her trade. But I am not paid to lecture the women, so I will quit, but sometimes I do feel like I would like to spank some young woman who is afraid to break the rule of three square meals a day and so stands over the stove when she ought to be taking a siesta to save doctor's bills from coming later.

SAN MATEO'S LARGEST SHOW.

That interest in high-class poultry is rapidly gaining favor in San Mateo county was easily seen at the second annual show of the San Mateo County Poultry Association, held at San Mateo last week.

There were 700 birds in the show, the American classes being the largest and the White Rocks being the strongest in that class. The English classes were next in size, Buff Orpingtons leading in that class closely followed by the White Leghorns. The latter named breed was stronger in numbers than at some of the larger shows this year. The special prize for the best pen went to the White Leghorns, so it can be seen that the quality was all that could be hoped for in that breed.

Although the Asiatic classes were the third largest in size, it was shown that they were strong on quality, as the special for the best male bird went to a Black Langshan. The Brahmas and Cochins were also well represented.

After the show, Secretary A. R. Schroeder announced that next year's show will include a dog exhibit as well as poultry.

Besides the poultry show there was what was thought to be the finest and largest exhibit of rabbits that has been shown in recent years, any place in the State. An exceptionally strong showing of Flemish Giants was made and was considered one of the features of the show.

Fresno Nursery Stock Famous.

California's fame for nursery stock has been demonstrated this year by the Fresno Nursery Co., which recently sold 37,000 rooted grape cuttings of wine and table varieties to the Agricultural Department of India for shipment to Bombay. Half of the vines were taken by L. T. Patel, the purchaser, and the others will follow. This company also sold 11,000 assorted fruit trees, 62,000 grape vines, and 7000 Wonderful Pomegranates to the Cecil Rhodes plantations, South Africa, and other shipments from various Fresno nurseries have gone to Australia, China, Japan, and other countries.

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FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price We help buyers locate desirable property Free. American Investment Association 93 Palace Bldg., Minneapolis, Minn.

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WANTED improved farms and wild lands. Best system for quick results. Full particulars and magazine free. Don't pay big commissions. Western Sales Agency, Minneapolis, Minn.

EXPERT Louisiana rice farmer desires work; manage any size proposition and make good. WM. SMITH, Route 3, Box 47, Fresno, Cal.

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WANTED—Dried fruits, nuts, honey beeswax, beans, etc. J. E. Lawrence, 32 Clay St., San Francisco.

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WALNUT TREES WITH AN ANCESTRY—Placentia Perfection, Black Root. Sions taken from trees that have had the following requirements for the past four years. Heavy crop, smooth large nuts, rapid growth, symmetry and absolutely free from disease. Some 18 feet high. All this year's growth. Valencias, Navels, sour seed bed stock. Commercial species of Eucalypts in quantities. Cerro Villa Nursery at Villa Park. Address Hugh T. Thompson, Orange, Cal.

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Will trade an almost new Peerless five passenger touring Auto for Hereford cattle. H. Lichtenstein, Mojave, Cal.

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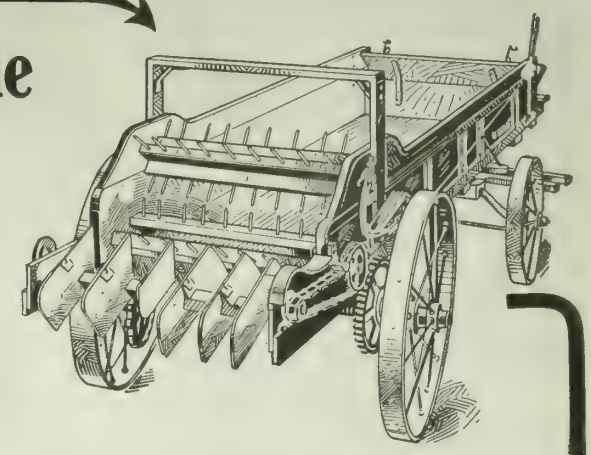

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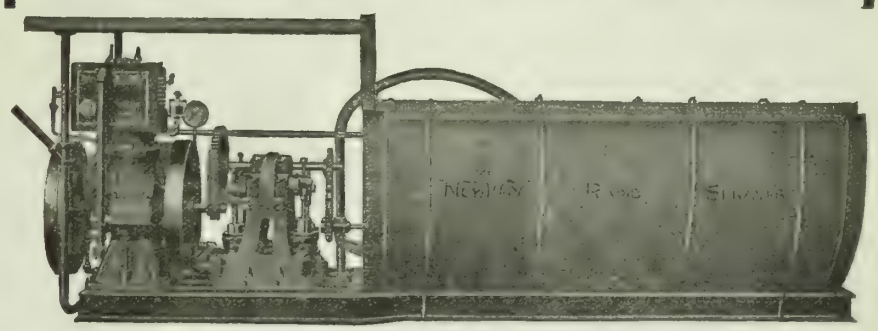

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A high duty guaranteed outfit.

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Insure your future profits.

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"New-Way" JEWEL Power Sprayer, equipped with 1½ H.P. *"New-Way"* JEWEL engine and 150-gallon clear cypress tank. For young trees and small orchards. Light and very economical.

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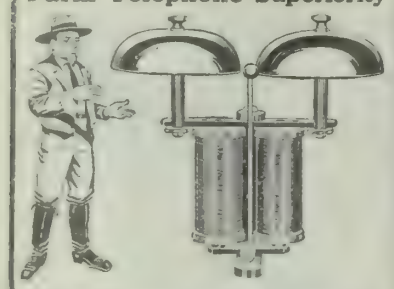

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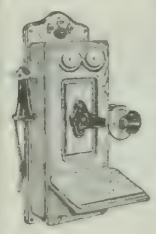

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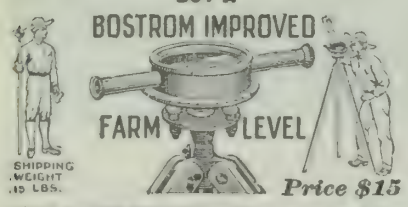

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The Home Circle.

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Santa Claus and Little Billee.

By John Kendricks Bangs,
Author of "The Idiot," "A Houseboat on the Styx," etc.

(Continued from last week.)

"I can't say, sir," said Santa. "I'll lose my job if I do."

"Well, what if you do? I'll give you a better one," said the banker.

"I can't—I can't!" faltered the man. "I—I—I've got a Little Billee of my own at home waitin' for me, sir. If I hadn't," he added fiercely, "do you suppose I'd be doin' this?" He pointed at the painted boards, and shuddered. "It's him as has kept me from—from the river!" he muttered hoarsely; and then his dispenser of happiness to so many millions of people all the world over sank into a chair, and, covering his face with his hands, wept like a child.

"I guess Santa Claus is tired, papa," said Little Bille, snuggling up closely to the old fellow and taking hold of his hand sympathetically. "He's been walkin' a lot today."

"Yes, my son," said Mr. Harrison gravely. "These are very busy times for Santa Claus, and I guess that, as he still has a hard night ahead of him, James had better ring up Henry and tell him to bring the car around right away, so that we may take him back—to his little boy. We'll have to lend him a fur coat to keep the wind off, too, for it is a bitter night."

"Oh," said Little Billee, "I haven't told you about these boards he wears. He has 'em to keep the wind off, and they're fine, papa!" Little Billee pointed to the two sign boards which Santa Claus leaned against the wall. "He says he uses 'em on cold nights," the lad went on. "They have writing on 'em, too. Do you know what it says?"

"Yes," said Mr. Harrison, glancing at the boards. "It says 'If You Want a Good Christmas Dinner for a Quarter, Go to Smither's Cafe.'"

Little Billee roared with laughter.

"Papa's trying to fool me, just as you did when you pretended not to know where I lived, Santa Claus," he said, looking up into the old fellow's face, his own countenance brimming over with mirth. "You mustn't think he can't read, though," the lad added hastily. "He's only joking."

"Oh, no, indeed, I shouldn't have thought that," replied Santa Claus, smiling through his tears.

"I've been joking, have I?" said Little Billee's papa. "Well, then, Mr. Billiam, suppose you inform me what it says."

"'Merry Christmas to Everybody,'" said Little Bille proudly. "I couldn't read it myself, but he told me what it said. He has it printed there so that if he misses saying it to anybody, they'll know he means it just the same."

"By jove, Mr. Santa Claus," cried Little Billee's papa, grasping the old man warmly by the hand, "I owe you ten million apologies! I haven't believed in you for many a long year; but now, sir, I take it all back. You do exist, and, by the great horn spoon, you are the real thing!"

Little Billee had the satisfaction of acting as host to Santa Claus at a good, luscious dinner, which Santa Claus must have enjoyed very much, because, when explaining why he was so hungry, it came out that the poor old chap had been so busy all day that he had not had time to get any lunch—no not even one of those good dinners at Smither's cafe, to which Little Billee's father had jokingly referred. And after dinner Henry came with the automobile, and, bidding everybody good night, Santa Claus and Little Billee's papa went out of the house together.

Christmas morning dawned, and Little Billee awoke from wonderful dreams of rich gifts, and of extraordinary adventures with his new-found friend, to find the reality quite as splendid as the dream things. Later, what was his delight when a small boy, not much older than himself—a pale, thin, but playful little fellow—arrived at the house to spend the day with him, bringing with him a letter from Santa Claus himself! This was what the letter said:

"Dear Little Billee:

"You must not tell anybody except your pape and mamma, but the little boy who brings you this letter is my little boy, and I am going to let you have him for a playfellow for Christmas day. Treat him kindly for his papa's sake, and if his papa is worth loving tell him so. Do not forget me, Little Billee. I shall see you often in the future, but I doubt if you will see me. I am not going to return to Twenty-third street again, but shall continue my work in the Land of Yule, in the Palace of Good Will, whose beautiful windows look out upon the homes of all good children.

"Good-by, Little Billee, and the happiest of happy Christmases to you and all of yours, affectionately,

"SANTA CLAUS."

When Little Billee's mamma read this to him that Christmas morning, a stray little tear ran down her cheek and fell upon Little Billee's hand.

"Why, what are you crying for, mamma?" he asked.

"With happiness, my dear little son," his mother answered. "I was afraid yesterday that I might have lost my little boy forever, but now——"

"You have an extra one thrown in for Christmas, haven't you?" said Little Billee, taking his new playmate by the hand. The visitor smiled back at him with a smile that anybody might have guessed that he was the son of Santa Claus.

As for the latter, Little Billee has not seen him again; but down at his father's bank there is a new messenger, named John, who has a voice so like Santa Claus's voice that whenever Little Billee goes down there in the motor to ride hime at night with his papa, he runs into the bank and has a long talk with him, just pretending that it is Santa Claus he is talking to. Indeed, the voice is so like that once a sudden and strange idea flashed across Little Billee's mind

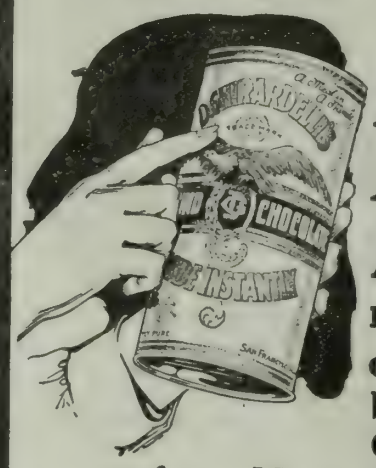
"Have you ever been on Twenty-third street, John?" he asked.

"Twenty-third street?" replied the messenger scratching his head as if it very much puzzled "What's that?"

"Why, it's a street," said Little Billee rather vaguely.

"Well, to tell you the truth, Billee," said John. "I've heard tell of Twenty-third street, and they say it is a very beautiful and interesting spot. But, you know, I don't get much chance to travel. I've been too busy all my life to go abroad."

"Abroad!" roared Little Billee, grin-



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ning at John's utterly absurd mistake. "Why, Twenty-third street ain't abroad! It's uptown—near—oh, near, Twenty-third street."

"Really," returned John, evidently tremendously surprised. "Well, well, well! Who'd have thought that? Well, if that's the case, some time when I get a week off I'll have to go and spend my vacation there!"

From which Little Billee concluded that his suspicion that John might be Santa Claus in disguise was entirely without foundation in fact.

MAKING CIDER VINEGAR.

Vinegar is very easy to make. Complaints from farmers that their cider "won't turn to vinegar" are nearly always found to be due to a lack of knowledge of the following facts as stated by W. Thatcher, Agricultural Chemist, University Farm, St. Paul:

There are two separate changes which take plase during the conversion of apple juice into vinegar: (1) The sugar in the cider is changed to alcohol, and (2) the alcohol is converted into acetic acid. The alcoholic fermentation is caused by yeast bacteria, and the acetic fermentation by the bacteria which are present in immense numbers in the "mother" of vinegar. Both of these changes require plenty of air, and go on most rapidly at a temperature of about 75°F. Failure of vinegar to "make" is usually due to lack of air or too low temperature, or to the addition of vinegar to fresh cider before the sugar in the cider has had time to be changed into alcohol.

The casks in which the fermentation is to take place should be filled not more than three-fourths full, in order to leave plenty of air space. The bung must be left out, but a loose plug of cotton may be placed in the hole to keep dirt from falling into the cider. The closing of the bunghole of the barrel with an empty bottle or any other stopper is not only useless, but injurious, as it prevents the free entrance of air.

In a cool cellar, it will take about six months for all the sugar to change to alcohol and nearly two years for all the alcohol to change to acetic acid. By keeping the cask where the temperature remains at from 60 to 70 degrees, the first change may be completed in about three months, and the second in a year or less. In cold climates this requires the moving of the barrel to a warm cellar in winter and out of doors in summer. The process may be hastened still more by adding compressed yeast (one cake, softened with lukewarm water, to each five gallons) to the fresh cider, and, after the yeast has finished working, from two to four quarts of good vinegar containing some "mother."

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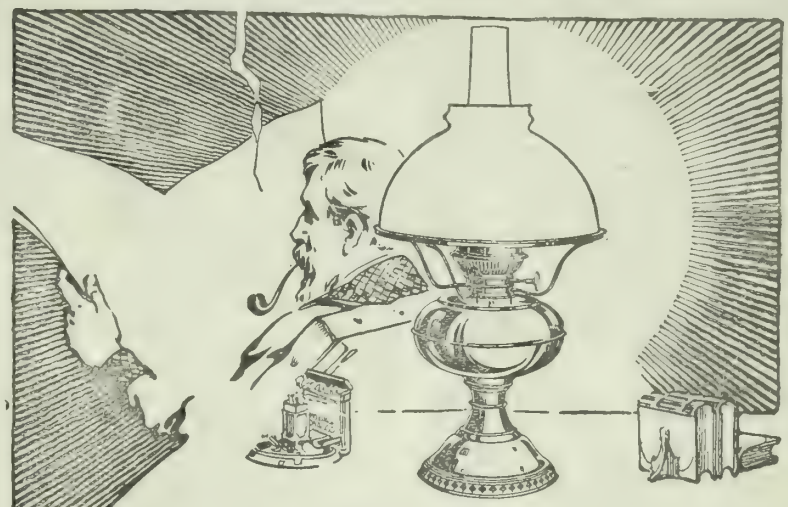

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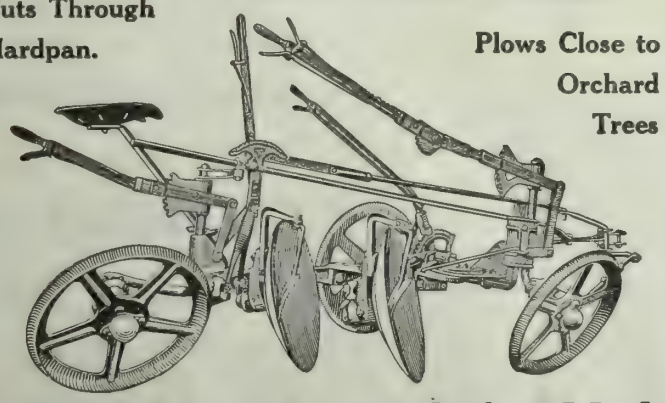

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Mention Rural Press.

THE MARKETS.

San Francisco, Dec. 17, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

A much stronger feeling has developed in the northern market, resulting in higher prices here for nearly all lines, as further supplies will be required from the north. Trading, however, has been quiet, and the advance has caused a further contraction of business.

California Club, ctl	$1.47½@1.52½
Forty-fold	1.52½@1.55
Northern Club	1.47½@1.52½
Northern Bluestem	1.70 @1.75
Northern Red	1.55 @1.70

BARLEY.

There is nothing new in the spot barley market, values remaining steady, and there is no activity in either spot or future grain. There is a very firm feeling in the speculative market, however, and offerings are light.

Brewing and Shipping	$1.37½@1.42½
Choice Feed, per ctl	1.27½@1.32½
Common Feed	1.25 @1.27½

OATS.

Values show no further change, and most lines are steadily maintained, although business is very quiet in all descriptions.

Red Feed	$1.65 @1.85
Seed	2.10 @2.30
Gray	Nominal
White	1.45 @1.50
Black Seed	2.50 @3.00

CORN.

Arrivals of Eastern corn so far have been light, and spot prices stand about as before, though there is no demand of any importance. Stock is offered to arrive at somewhat lower figures, but this does not affect the spot market.

California Yellow	Nominal
Eastern Yellow	$1.85 @1.90
Eastern White	Nominal
Egyptian	1.57½@1.62½
Kaffir	Nominal

RYE.

Business is extremely light, but local offerings are steadily held at the old quotations.

Rye, per ctl	$1.45 @1.50
Seed	1.65 @1.70

BEANS.

Aside from the general firmness of prices, the bean market is rather uninteresting at present. Ample stock has by this time arrived at distributing centers to carry them over the end of the year, and the amount of new business coming out is extremely small. Supplies in most lines are considered ample for all probable requirements, though some lines are unusually well cleaned up for this season, and the market exhibits considerable firmness all around. Further advances are again noted this week, this time in large whites and bayos, the latter taking quite a jump.

(On wharf.)

Bayos, per ctl	$4.65 @4.85
Blackeyes	4.00 @4.25
Cranberry Beans	4.00 @4.25
Horse Beans	1.90 @2.10
Small Whites	4.75 @5.00
Large Whites	3.25 @3.40
Limas	5.00 @5.10
Pea	Nominal
Pink	3.00 @3.25
Red Kidneys	4.25 @4.50
Mexican Red	3.75 @4.00

SEEDS.

Business in most lines has settled down to the usual quiet condition before the holidays, though a fair renewal of demand is expected within the next month or so. Prices are steadily held at the former level.

Alfalfa	12½@15 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	7 @ 7½c
Hemp	2½@ 3 c
Millet	2½@ 2¾c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

Current business is not especially active, supplies being ample for current needs. Values are firm as quoted for some time past.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.65 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Shipments to this market have increased a little in the last week, but are still unusually light for this time of year. The demand, however, also continues light, and is well supplied. At the same time, it is conceded that the continued light receipts are causing a steady reduction of the supply in dealers' and consumers' barns, and the depletion of supplies is expected to result in a better buying movement after the first of the year. The light shipments are attributed not only to the light demand, but partly to the fact that growers are busy with planting, and larger offerings are expected when this work is completed. Outside holders already show more interest in the market, but have so far received little encouragement. The local movement of alfalfa is limited. Grass on the ranges is said to be doing well, but more rain is wanted around Fresno.

No. 1 Wheat, or Wheat and Oats	$15.00@16.00
do No. 2	13.00@14.00
Lower grades	12.00@@13.00
Tame Oats	12.50@16.00
Wild Oats	11.00@14.00
Alfalfa	10.00@14.00
Stock Hay	9.00@10.00
Straw, per bale	65@ 90c

FEEDSTUFFS.

Prices show no quotable change, and business is quiet, with practically no movement except in a small jobbing way. The improvement in green feed conditions is cutting down the demand considerably.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	23.00@24.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	28.00@29.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	28.00@29.00
Rolled Oats	33.00@34.00
Shorts	27.00@28.00

Garden Truck.

VEGETABLES.

This market is drawing on the south for an increasing proportion of its supply of green vegetables, and this has resulted in a slight stiffening of prices. Arrivals from the south, however, are frequently in excess of requirements, in some lines. Quite a lot of beans and peas have been carried over lately, and ordinary offerings are rather easy, though choice lots bring good values. Ordinary tomatoes, also, are considerably lower, while the best stock is held at about the former level. Cabbage is a little lower, while lettuce, as well as southern cucumbers, green peppers, summer squash, etc., show a sharp advance. Winter rhubarb is also bringing good prices, while celery has declined sharply. There is a burdensome supply of mushrooms, causing a little easiness of prices.

Cabbage, per ctl	$ 1.25@ 1.50
Cauliflower, dozen	40@ 60c
Cucumbers, Southern, box	90c@ 1.25
Green Peppers, lb	4@ 5c
Carrots, per sack	50@ 65c
Green Peas, Southern, lb	5@ 10c
String Beans, lb	5@ 7c
Summer Squash, lug box	1.25@ 1.50
Tomatoes, Southern, crate	35@ 85c
Eggplant, lb.	4@ 8c
Lima Beans, lb	3@ 5c
Sprouts, lb.	4@ 5c
Celery, large, crate	1.50@ 2.00
Rhubarb, box	1.25@ 1.50
Lettuce, crate	1.00@ 1.25
Mushrooms, lb.	8@ 10c

POTATOES, ONIONS, ETC.

Sweet potatoes are getting quite scarce and have been marked up again. Oregon onions are also higher, and the best lots of garlic are held at an advance. Otherwise values stand as before, offerings of both potatoes and onions being moderate.

Potatoes—	
New River Whites	75c@$1.15
Sweet Potatoes, per ctl	1.50@ 1.60
Oregon Burbanks	85c@ 1.25
Onions: Yellow River, ctl	$ 2.00@ 2.25
Oregon	2.40@ 2.50
Garlic, per lb	7@ 10c

Dairy Produce.

POULTRY.

Supplies of Eastern chickens have been rather scant for the last week, and as there is a fairly active demand, with no large offerings of local stock, prices on several lines are higher, with a firmer feeling all around. Dressed turkeys, however, are again coming in rather freely, and while no quotable change has been made, the market is easy, the outside figures being hard to get.

Large Broilers, per lb	22 @23 c
Small Broilers, per lb	28 @29 c
Fryers, per lb	19 @20 c
Hens, extra, per lb	18 @19 c
Hens, large, per lb	18 @19 c
Small Hens, per lb	16 @17 c
Old Roosters, per lb	14 @15 c
Young Roosters, per lb	18 @20 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	4.50@ 8.00
Turkeys, live, per lb	21 @22 c
do dressed	25 @27 c

BUTTER.

Arrivals this week have been rather liberal, and as dealers are not anxious to carry much surplus, prices have been gradually weakening, extras standing 1½c under the last quotation. Firsts, however, are unchanged.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	32	32	31	31	31	30½
Firsts	30	30	30	30	30	30

EGGS.

The cool weather continues to limit the production in most places, keeping prices well above last year's level. Offerings, however, are a little larger than last week, and both extras and firsts are slightly lower.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	45½	45½	45½	46½	46½	45
Selected Pullets	43	42	44	44	43	41

CHEESE.

Supplies are still moderate, and with a very fair demand values are well maintained on all grades. The only change is a ½c advance on Y. A.'s.

Fancy California Flats, per lb	17½c
New Young Americas, fancy	17½c
Monterey or Jack Cheese	20@22 c

Deciduous Fruit.

Grapes and strawberries are still offered, and the former are a little higher, with diminishing supplies, though neither receives much attention. Cranberries find a better demand, but there is more pressure to sell and prices are lower. Pears are higher, but find little demand. The movement of apples is increasing, as many dealers are buying supplies for the holidays, but supplies are still ample for all local requirements, and there is no advance in prices.

Strawberries, chest	$ 3.00@ 8.00
Cranberries: Cape Cod, bbl	10.00@12.50
Apples: Baldwins	1.15@ 1.50
Spitzenbergs	1.10@ 1.60
Greenings	1.00@ 1.35
Bellefleur	1.25@ 1.75
Newtown Pippins	1.25@ 1.75
Pears: Winter Nelis	1.75@ 2.00
Grapes, crate	75c@ 1.25

Dried Fruits.

Locally the dried fruit market is almost entirely devoid of interesting features, as the holiday trade is over, outside buyers are out of the market for the most part, and packers show no disposition to increase their holdings till after the end of the year. In view of the rather light stocks in all quarters, it seems probable that better prices will be realized later on than can now be obtained. Prunes are very closely cleaned up, and while no advance can be quoted it should be possible to get a premium for desirable lots. Local packers report an easy feeling in peaches, with considerable stock scattered through the country, though Eastern reports would indicate a little more strength. Some progress is reported in the effort to get peach growers organized. While November raisin shipments were light, it is estimated that about half the crop has been shipped with good prospects of a close clean-up before the 1914 crop is available. Business, however, is dull, and Eastern reports indicate a rather easy feeling. The New York Journal of Commerce says:

"Indifference manifested by Eastern buyers and sharp competition among packers for the little business offered are given as reasons for the depressed condition of the market for California seeded raisins. On reliable authority it was said that Associated brands were being offered and sold at 7½c f.o.b. Coast for fancy, less 10%, with an additional 2% for cash, which would make the flat price 6¾c, but even at this concession buyers show a disinclination to take hold. On the spot fancy seeded sells slowly at 8 and 8¼c, as to brand. Stocks of California London layers in first hands here are said to be exhausted, and the market is now controlled by two or three jobbing houses which have been quietly buying up the offerings in anticipation of the export demand, which will soon set in, and to cover such home requirements as may appear. Up to $1.75 is being asked for three crowns by these holders, $2 for four crowns, $2.50 for five crowns, and $3 for six crowns.

"California prunes are closely cleaned up on the Coast, the bulk of the 1913 crop remaining being, these reports say, in the hands of one packer, who is holding for higher prices."

Evap. Apples, 1913	6½@ 8 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4½c
Black	2½@ 3½c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 @ 4½c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4¼c

Citrus Fruits

The orange markets of the East seem to be recovering from the slump of ten days ago, and are now firm at prices quoted and demand good for extra fancy, large sizes. The great amounts that Florida and California shipped during November, together with considerable poor stuff, were the cause of the glutted mar-

Christmas Gifts

Books make very acceptable Christmas presents, and to readers of the PACIFIC RURAL PRESS we would suggest one of Prof. Wickson's books as most likely to please any farmer. Select one of the following:

CALIFORNIA FRUITS
AND HOW TO GROW THEM.
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Don't delay sending, as the Holiday season is almost here. Make orders payable to

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FAIRMEAD for your farm.

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kets, but as shipments are now very much less, the chances for the holiday clean-up are good.

At New York on Monday, Dec. 15, California navels sold for $1.30 up to $3.35 per box, while Arizona navels brought up to $4.60. Other auction points were about the same. On the same date 15 cars of Florida oranges sold at Cincinnati for $1.75 to $2.70. Lemons are bringing from $3 to $5.40 per box.

Shipments from Florida for the season so far exceed 3,500,000 boxes. From Tulare county up to last Saturday the shipments were 2880 cars; from Butte county, 226 cars; from southern California, 562 cars.

Supplies of oranges in the San Francisco market are large, with more than ample reserve stocks at shipping points. Prices accordingly show no greater firmness, though with the approach of the holidays and more attractive offerings the demand shows considerable improvement. Tangerines are lower. Other lines are steady at the former prices.

Oranges (per box):	
New Navels	$ 1.50@ 2.50
Tangerines, crate	1.00@ 1.25
Mandarin	1.25@ 1.50
Grapefruit, seedless	3.00@ 4.00
Lemons	2.50@ 6.50
Limes	4.00@ 5.00

Nuts, Honey, Hops, Etc.

NUTS.

The nut market is featureless, with prices nominally as before, supplies of California stock being practically exhausted.

Almonds, new crop:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

While the current demand is limited, there is some inquiry all the time, and with very light offerings prices are firmly held at the former level.

Comb, white	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Supplies here are very light, as old stock has been well cleaned up and little is offered in producing districts. Prices are unchanged.

Light	30 @32 c
Dark	28 @30 c

HOPS.

Business continues quiet, though some sales are reported in the Sonoma district at 20c, and some stock is held in hope of an advance, which should be obtained in view of the scarcity reported in other markets. A few 1914 contracts have been made within the range quoted.

1913 crop	20@22c
1914 crop	15@17c

Live Stock.

The market shows considerable firmness all around. A stronger tendency is reported in beef stock, while calves and lambs are scarce. Offerings of live hogs continue on about the former scale, prices being steadily maintained.

Steers: No. 1	7¼@ 7½c
No. 2	7 @ 7¼c
Cows and Heifers: No. 1	6¼@ 6½c
No. 2	5¾@ 6 c
Bulls and Stags	2½@ 5 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy	7¾@ 8 c
150 to 250 lbs	8¼@ 8½c
100 to 150 lbs	8 @ 8¼c
Prime Wethers	4¼@ 4½c
Ewes	3½@ 3¾c
Lambs: Suckling	5¾@ 6 c

DRESSED MEATS.

Steers	12 @12½c
Heifers	11 @11½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	12½@13 c
Dressed Hogs	13½@14 c

WOOL.

Local buyers are taking little interest, and business is confined to small transactions in which holders are willing to accept rather low figures.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HIDES.

So far prices have been maintained, but there is a slightly easier tendency, due to the general lack of demand. Offerings, however, are very light.

Heavy Steers, over 56 lbs	15½c
Medium	15 c
Light Steers, under 48 lbs.	15 c
Heavy Cows, over 50 lbs	15 c
Light Cows, 30 to 50 lbs	16 c
Kip	15 @16 c
Veal	18 @19 c
Calf	18 @19 c

HORSES.

The comparatively large offerings of the last few weeks seem to have met the principal requirements for the present, and the last sales have received somewhat less attention from buyers. While the stock coming in has been pretty well sold out, prices show some tendency to easiness.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650	225@250
Chunks, 1350 to 1500 lbs	150@200
Wagon Horses, 1250 to 1350	100@150
Delivery Horses, 1050 to 1250	100@125
Desirable Farm Mares	75@100

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

PUBLISHER'S DEPARTMENT.

Have you sent your order yet for the new book that we have just issued—"One Thousand Questions in California Agriculture Answered"? This book will prove itself invaluable on your farm. Every week that you have it the more you will come to depend upon it. Whether you want to look up something about soils, irrigation, pruning, planting, fertilizing, dairying, stock or poultry, the book will be equally valuable. Then the veterinary queries and answers and the insect pests and remedies all will be there when you want them. Send today for a copy, $1.50 postpaid.

Our subscription work has been going ahead at a good rate the past few weeks. More and more farmers are relying upon the practical suggestions, the helpful articles and the market reports of the PACIFIC RURAL PRESS.

The "Suburban Garden Guide," by Parker Thayer Barnes, is a new, practical book just issued by the Macmillan Company, 66 Fifth Avenue, New York. The price of the book is 50 cents. Address the publishers.

A warning against selling old varieties with new names has been issued. Recent instances are calling the yard-long or asparagus bean the Sharon pea, and the calling of the jack bean the giant stock pod bean or Wataka bean. Prices in such cases are fearfully high.

Killing Squirrels is an Easy Job by the KILMOL Method

KILMOL, used with U. S. SQUIRREL DESTRUCTOR, will kill every squirrel on your entire farm.

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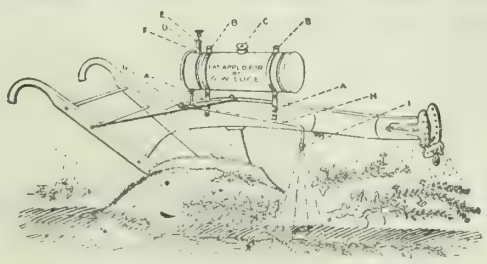

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Waste no time. Tell us how many acres you want to treat and the crop you are planting.

Now is the right season to do the work. Farmers have tried useless methods for years. Nonpareil with Presto Plow Tank does the work

One large grower has purchased up to date this year $1500.00 worth of "Nonpareil." Having experimented for the past four years, he knows what he is talking about.

Use Carbon Bisulphide to exterminate Ground Squirrels, Gophers, Prairie Dogs, also Borers, Ants, Root Aphis, Etc. These are absolutely effective remedies. Leaves no injurious after-effects if inhaled while handling.

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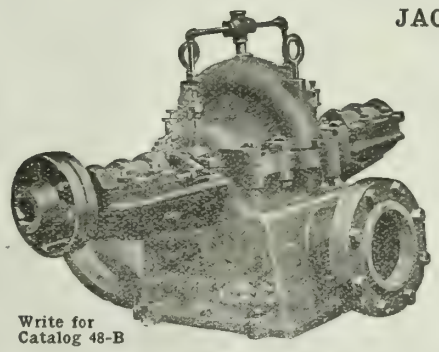

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Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

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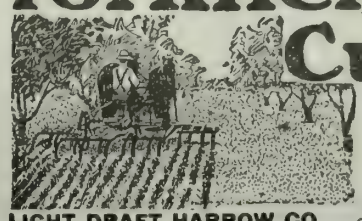

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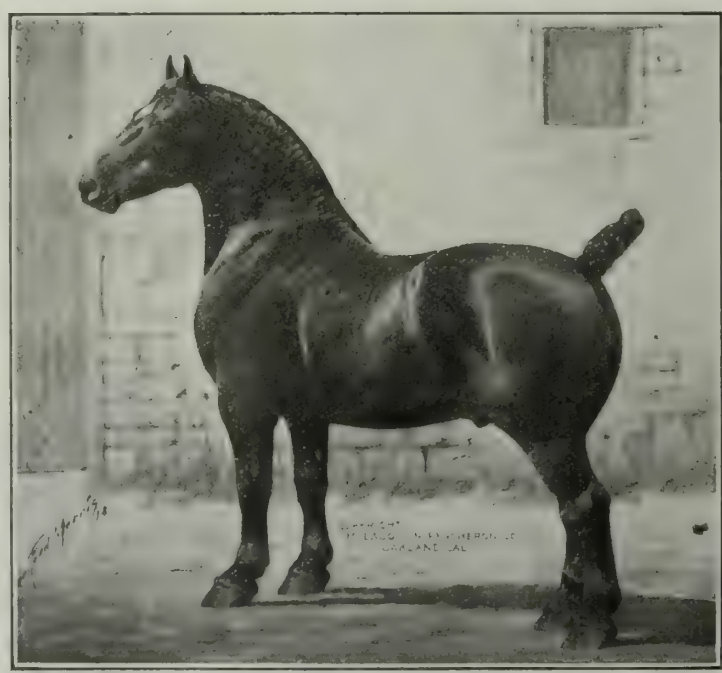
LONDRECITOS 97561 (99574)—Black, foaled 1911. RESERVE CHAMPION STALLION, the largest at the show. The highest qualified, really big stallion in the whole Percheron division, weighing 2,240 lbs. just before exhibition. Tremendous bone, soundest of feet, cleanest of joints, immense power and very correct action. The HIGHEST-CLASS PERCHERON EVER TAKEN INTO CALIFORNIA.

KABOTIN 97570 (96617)—Gray, foaled 1910. Short feet stallion of dashing style, flash legs, beautiful dark gray color, white mane and tail, ivory bone and very dressy style.

KOUSSIN 97562 (95915)—Black, foaled 1910. Another short feet stallion of tremendous thickness, great weight, wonderful width of breast, great muscling of arms and thighs and wide spring of ribs.



The Great Coming 3 Year Old Longis (99535) Imported

LIGUEIL 97404 (103358)—Gray, foaled 1911. One of the most impressive two-year-old stallions that left France this year. Was bid for by several importers on account of his massive build and great weight—over a ton now—and his high quality. He also was in the judges' feet at the International.

LONGIS—Black, foaled 1911. A very stylish youngster, just landed from the boat on November 28 and thin in flesh, but showing all the marks of a great one—long straight quarter, well arched neck, straight topline, deep rib, thick through stifles, and good eye.

LOIRET 97629 (99980)—Dark gray, foaled 1911. Upstanding, dashing, dressy colt with splendid action and powerful muscling of back, loin and quarter. Sloping shoulders, nice, long neck—a sure winner when fit.

LOHENGRIN—Black, foaled 1911. Has near hind foot white to ankle. A wide, short-legged pattern of great strength throughout, heavy, round body carried by strong bone and the soundest of feet. Goes remarkably well.

Belgian Medallists

DRAGON—Chestnut, foaled 1910. **Gold Medalist,** winner in group, and a real picture of the best modern Belgian type. Tremendous thickness of chest, barrel quarter and stifle, short legs, flat, wide, clean bone, smooth joints and a beautiful mover at walk or trot. There was no better Belgian type at the big show.

CHANAL DE LA LYS 7695 (XX1723)—Chestnut, foaled 1911. **Gold Medalist** and winner in group. Dashing, long-necked, stylish colt of excellent size and quality all over with all his weight. Beautiful sloping pasterns, silkiest of hair, prominent, bright eye, mobile ear, neat head—strength and quality all over.

Every horse in the lot is sound, young, stylish, of the best conformation, purest lineage **and all very recently landed from the boat. Pronounced by experts the soundest, best and highest priced lot shipped through Chicago this year.** Stallions will be offered for sale at our barns as soon as they have rested from their journey by express across the continent.

We handle only young imported horses with all their usefulness before them.

At the last California State Fair we won every first prize and championship for stallions for which we competed and every colt we showed was in the money close up to the top. Catalogs on application.

McLaughlin Percheron Company

OAKLAND, CAL.

THE PACIFIC RURAL PRESS

Vol. LXXXVI. No. 26. SAN FRANCISCO, SATURDAY, DECEMBER 27, 1913. Forty-Th...

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The Alfalfa Finished Steer and Why.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

Beef finishing on alfalfa ranches is such a radical change from the old methods of beef practices on cheap range land that cattlemen and alfalfa growers alike have been a little slow in making the change, but it is evident that the time is not far distant when this phase of farming will command a great deal of attention, in all irrigated sections at least.

At one time such a plan would have been strongly ridiculed, for with a State only second to one in this country in the amount of open range land and with the acreage of alfalfa insufficient to supply the demands of the dairy cow and hog markets, it was considered an economic impossibility to profitably handle beef cattle as long as conditions did not change.

Gradually a change has been taking place in the old conditions, the ranges having deteriorated in quality in many sections, also the increasing rural population has made yearly inroads on the amount of better range land and lastly through irrigation projects and independent pumping plants the acreage of alfalfa has increased to such large proportions that it now seems very probable some new market must be developed, and the range raised beef steers appears to be that market. It will be noticed that the words "range raised" are used, as there is a great deal of difference in the profits of a range raised and alfalfa finished product than there is in alfalfa raised stuff, and it is on this point that so many of our alfalfa growers disregard beef production, thinking quite correctly that to raise a steer from calfhood to the finished steer of 1000 or 1100 pounds would require a larger tonnage of hay than the animal would be worth when sold to the butcher. From the range grower's standpoint it is not hard to see where the benefits from a rational alfalfa finishing system would come from, for it is the finishing of stock that the biggest losses are felt.

In reality our present range practices do not allow of any finishing, or at any rate any proper fitting, for while wild feeds will always be supreme in economical beef growing, they do not harden an animal as the butcher trade prefers. This creates a big waste in the producing powers of the ranges, as in the endeavor to add weight to the older stock a large amount of feed is consumed which should be used in raising younger stuff, and the resultant fault is that our ranges are not growing the largest number of cattle that would under another system be possible.

From the standpoint of the alfalfa grower, a cattle finishing system is essential, not only to provide a larger market for the increased planting, but also to act as a builder of the soil, for from the past history of this, as well as all other States, it is found that where stock raising has been neglected, there also you will find the crop yield decreasing. As a class the alfalfa farmer is today about the most optimistic man in the country, for during the past two years, when the prices paid for butter-fat and pork have been high and the lack of winter rains have caused almost complete failures among grain hay growers, the man with a stack of alfalfa was as evident as the proverbial "hog on ice," but if we look back upon years of normal rainfall it will be remembered that so recently as 1911 the price of alfalfa hay was in some localities so low that the grower was forced to sell at prices that would hardly warrant the investment necessary for its production.

A Happy and Profitable Family of Herefords Owned by Simon Newman Co.

The writer remembers having visited a ranch in the Sacramento valley that year where over 200 tons of hay was stacked, for which the highest offer made by the buyers was $5 a ton, and the owner was holding for a better price, which he did not get until the following year, which, fortunately for him, proved a poor one for grain hay farmers.

In many ways the dairy cow has so far been the greatest aid to the increased alfalfa production and will always continue to be a large factor, which is a good thing, as it increases the fertility of the soil and provides a lucrative market for a large amount of hay, but it is a fact not worth disputing that many alfalfa growers do not like to be tied down to the continual work of a dairy.

This has long been recognized as an objection which many had to the dairy cow, but it is more forcibly shown at the present time than ever before in the number of dairy cows that have been sold to outside States this year in order that the alfalfa man could take advantage of the high hay prices, for, as many have remarked, "with hay at $10 a ton, I can make as much money selling it direct as I can in feeding it to the cows."

There is little question but that this is the wrong way of looking at the subject, as with good cows the argument does not hold good, but it is used here to emphasize the point that a great many only consider the

(*Continued on Page 615.*)

Pacific Rural Press

Issued Every Week at 420 Market Street, San Francisco.

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CALIFORNIA WEATHER RECORD.

The following rainfall and temperature record is furnished the PACIFIC RURAL PRESS by the United States Department of Agriculture Weather Bureau, at San Francisco, for the week ending at 5 p.m., Dec. 23, 1913.

Stations.	Rainfall Data.			Temperature Data.	
	Past Week.	Seasonal to Date.	Normal to Date.	Maximum.	Minimum.
Eureka	2.14	10.38	14.90	54	36
Red Bluff	2 28	8.96	8.88	50	32
Sacramento	.62	5 81	6.18	56	34
San Francisco	1.88	9.17	7.88	54	44
San Jose	.86	5.96	5.32	60	32
Fresno	.28	2.55	3 04	56	36
Independence	.14	3.71	2 97	50	18
San Luis Obispo	1.42	6 79	5.01	60	36
Los Angeles	.74	4.05	4.26	62	44
San Diego	.40	2.80	2 55	62	46

The Week.

California awakes on Christmas morn to find her stocking full of water than which there could be no greater gift, from the point of view of material progress and prosperity and probably none so promotive of the worshipful spirit—since the old idea, that to save a man you must get him in a tight place, is no longer fundamental in saving policies. The original doctrine of Christ, as taught by his life and deeds, clearly was that to save a man you must first help him to get out of earthly troubles: the midiaevalists reversed the policy of Him whom they claimed to follow: modern Christianity is a restoration of the standards of the founder of the Christian era. And so this Christmas gift of a water-thrust to bedrock is the greatest California could receive, not only because it assures material safety and prosperity, but because it befits the state for faith, trust and aspiration. It is not only the substance of things hoped for, but the evdience of things unseen. And as it is for the state so may it prove in the life of every one of you!

Lest some one should challenge our right to preach without a license, we creep under the cloth by quoting a few sentences from an address recently delivered in Berkeley by Dr. Warren H. Wilson, superintendent of the Department of Church and Country Life of the Presbyterian Board of Home Missions: "There is an intimate relation," said the speaker, "between the experience of a people in getting a living and their social and religious institutions, a connection between the religious and economic life that is not in common thought. The process of getting eternal life is a continuation of the process of securing a livelihood here. The religion of Jesus is not mystic. It is concerned with man's present necessities, with his desire for material goods and comforts. A new and better era has already begun; an era marked by scientific agriculture; by co-operation in buying and selling; the establishment of consolidated schools, of socialized churches, and of farmers' organizations for self help and development."

Of course, Dr. Wilson does not contend that that is all there is of the religion of Jesus: it is only one aspect of it. It does, however, justify our contention that great rains settle the dust on the road to eternal life for Californians and are therefore a Christmas gift of inestimable value.

Money to Start Young Farmers.

Money is, of course, a fitting Christmas topic. Money has been pouring into the sacks of our gift-stores during the last two weeks like grain from the spot of a combined harvester. Another glint of Christmas money is seen in the records of the New York postoffice. When the last European steamer due to arrive abroad before Christmas had sailed, it was seen that, all told, foreigners in New York City sent 496,898 money orders, aggregating $7,775,000, to the folks at home. To Great Britain went $2,000,000, to Italy $1,667,000, to Russia nearly $800,000, and to sixteen other countries sums dwindling to $1069 in the case of Liberia, recipient of the smallest amount. This money goes largely to small farms in Europe whence husbands, brothers, or children have come to make a start in the New World. Much of the money goes into the agricultural banks and helps to finance European farming. Thus, in a way, money goes from the New World to the Old World and helps the latter to need less of the former's food products. While we are doing this abroad, what are we doing to supply money to build up greater food production in this country?

This is a question of the utmost importance, and one of the keenest utterances is that of Dean Hunt, of the College of Agriculture at Berkeley, recently published in circular form, for which we hope our readers will make application to the College and read carefully. The essence of the proposition is this:

"The postal deposits are loaned to savings banks at 2%. The State loans its surplus at 2%. Suppose a young man, having saved $1,000, could go to the State or the United States and borrow $4,000, not at 2%, but at 3%. If he should pay 6%, or $240 annually, at the end of 25 years, approximately, he would have canceled the principal and interest. This is not a plan to help the farmer, but to help the nation. When the people come to understand it so, a way will be found by which money may be loaned to individuals as well as to banks, and upon substantially the same terms."

An Immaterial Objection.

We have heard some rather trivial comments upon the foregoing proposition as to the inadequacy of the security in such a system of individual loans. That, it strikes us, is simply a matter of administration: of course, it could be all thrown away if the requirements were slack and the supervision perfunctory or dishonest. But why is it necessary to suppose it will be done in that way? We doubt, however, if there will ever be any realization of a plan to make individual loans of public money—although it is successfully done in Europe, and some notable developments are proceeding that way. We incline rather to proper organization of financial institutions by farmers, by States, and by the nation—all of them under strict government supervision and all of them operated from an agricultural point of view to meet clearly discerned agricultural requirements. When this is done, public money is just as safe in their hands as it is in the hands of banks organized from a commercial point of view, and it can be arranged to be just as liquid through more rational banking, toward which the new currency law passed by Congress this week seems to be tending. We are surely on the highway toward more rational handling of money, and the first thing the public has to overcome is the hoary impression that only professional money-changers can handle money safely. The need of the time, as we see it, is to demonstrate in this country that money can be handled just as safely and much more economically in other ways than it has been handled hitherto. It is the function of Congress and of the legislatures to prescribe just how this can be done.

A fundamental point in Dean Hunt's suggestion is that public money used for better farming is not a special privilege to a class, but is for the good of all classes. It is strictly true. But even if one refuses to take that broad view, it will meet the issue to take a narrower one. Agriculture will perhaps secure all that it needs if the special privileges which commercial finance has enjoyed so long be transformed into general availability of money on equal security to all who organize for it, as the laws will probably soon prescribe. Striking the shackles from public money and setting it free upon probation will be the gift of some coming Christmas.

We Need Not Depopulate the Cities.

We could not do it if we would, nor would it be an agricultural benefit if we could do it. Congressman William Kent, of the Second California district, has issued an interesting circular letter on public affairs from which we take the following paragraph: "The demand for immediate consideration of some system of rural credits is of especial interest at this time, when our economic difficulties are so largely due to our badly distributed population. Only by the movement of the surplus of city dwellers into the rural regions and by the consequent increase in production of food may we derive the prosperity which should be ours."

It is our notion that Mr. Kent is mistaken in the idea that realizations of agricultural progress will make any material reduction in the population of our cities. It is not necessary, and from an agricultural point of view it is not desirable. It is both necessary and desirable that the undue flow from country to city should be arrested to some extent, but the return of those who have flown might as well be left out of the calculation, for it will never largely occur. In the first place, the development of the country will increase city activities and will make our cities larger rather than smaller: both city and country are national requirements, and rational correlation is the thing to be desired and striven for. In the next place, volume of country produtcs is not necessarily proportional to rural population. It is rather a result of rural producing conditions and efficiency of producers. Take, for instance, Germany: if current statistics are accurate, Germany has increased her food production from 60% to 85% of her total requirements during the last quarter of a century. Has Germany more farmers than twenty-five years ago? In a lecture at Johns Hopkins University last week, Professor Carl Rathgen, of the Colonial Institute at Hamburg, and Kaiser Wilhelm exchange professor at Columbia University this year, said that whereas in 1882 something like 19,000,000 people in Germany were engaged in agricultural pursuits, today the number is less than 18,000,000. Germany is therefore producing vastly more food products with a million fewer farmers than formerly. This is the result of better knowledge, more fertilizers, better farm machinery, and money at low rates of interest which have made

all these agencies operative and have increased the ability and efficiency of fewer men to do more than a million more men could do a generation ago.

Some people are a little scared over the agitation of the "back-to-the-farm" movement: there never will be any of any moment. Others are scared about efforts to multiply farmers and increase farm products for fear their occupation will be gone, or reduced in profit, by reduction of vaules. There is nothing in the world's history to warrant apprehension of less value for food products; speaking broadly, they are always advancing. There is no need to apprehend too few consumers or too great reduction of city population. There is, in fact, nothing to be scared about—except that, through the overhanging cloud of public ignorance and prejudice, the light of science, both natural and economic, may not break soon enough to give the present generation of American farmers the rewards of better farming business which they should enjoy.

Making Our Own Potash.

We would not stop using German potash because of it, but still it is joyful to think how busy our Coast will be when all the kelp-reduction outfits get to work. It seems doubtful whether there will be room enough left on the beach to land a fish or take a bath. For Dr. Galloway, of the U. S. Department, has just written to our Congressman Kahn, in answer to a question, that "the kelp on the California coast alone could be used to produce 1,000,000 tons annually of potassium salts, which would equal all the potash salts imported from Germany and consumed as fertilizer in the United States every year. The Department during the past two summers," said Dr. Galloway, "has made a survey of the California kelp beds and now needs an appropriation of $8000 to make maps of the beds for the use of persons who might wish to engage in the industry of turning kelp into potash salts." Of course, our Congressmen will work for the appropriation to make the maps, and then there will begin an era of slack-water mining in California such as the world has never seen, for we believe the world has never found it profitable to make commercial potash out of seaweed. But what of that? California will show them how!

How to Make Everything Sure.

Perhaps all readers do not know that there is one way to make everything sure, and that is the Lloyds' way. The sentence comes near having a religious significance, like that with which we began this week's musings, but is quite otherwise, for the glory of the Lloyds is strictly terrestrial. If you wish to be married before the end of the year, Lloyds will guarantee it; if you wish to die, Lloyds will take the chances that you won't. Lloyds has a world field and will insure anything from a kid to a kingdom, but we believe California has given them a new experience through the underwriting of an alligator-pear tree for H. A. Woodworth, of Los Angeles county, for $30,000 against fire or frost. They ought not to have charged much for it, for the tree is in very little danger of either. The story is that this six-year-old tree last season netted Mr. Woodworth $8206 in fruit and bud wood, the latter being used for propagation. To protect his prize tree from marauders, Mr. Wodworth has completed a lath fence around it thirty feet high. If the Lloyds did not make their premium large enough to cover a share of the advertising advantage which would accrue to the tree from the operation, the Californian surely has driven a good bargain with them.

Queries and Replies.

Querists must submit full names and addresses.

Grasses for Coast Uplands

To the Editor: Would you kindly write me the amount of seed of Italian rye grass that should be sown per acre where it is a rather sandy soil, and also a list of any other grasses you think might do well in this district, especially clovers? Also where I might be able to get some of that New Zealand grass that they call the "million-dollar grass"—I have forgotten the scientific name. Also, what is the feeding value of Bermuda grass, as the trouble with most of our ranches is that they are composed of a very sandy soil, in fact all sand, and what is needed here is a grass that will form a sod.—Reader, Marin county.

Italian rye grass is usually sown at the rate of fifty pounds per acre and should be started as soon as possible, for it is not injured by frost, and the catch will depend much upon growth early in the rainy season. We know no introduced clover that will compare with the common bur clover. On the moist lands of Humboldt county, white clover and alsike clover live through the summer, but that would not be possible on your sandy soil without irrigation. The so-called million-dollar grass was a good deal of a fake. If we remember correctly, it was Paspalum dilatatum, which makes wonderful growth in hot, interior situations with plenty of water, but it will not grow at all during the winter and will not grow during the summer on dry land.

Bermuda grass has good feeding value, but Bermuda grass is also not a winter grower. The whole top is killed by the frost, and although the grass will hang on, the growth from it will be relatively small on dry land. It is most useful in California on alkali lands which are moist, standing even pretty strong alkali without detriment. You may improve your winter pasturage by using Italian rye grass, English rye grass, orchard grass, red top and tall oat grass. They will all try to live through the dry season by bunching and are all pretty free seeders unless too constantly fed off through the spring.

The mesquite (Holcus lanatus) is a coarse grass but has sometimes been described by dairymen in your district as the best of introduced grasses which they have tried. You certainly have a problem in getting a grass that will form a sod without irrigation on dry land. We have been looking for that for thirty-five years and have not yet found it, but we hope you are young enough to work the thing out.

Filbert Growing in California.

To the Editor: Would you mind stating more in detail why you think filberts will not be worth planting, as you stated recently in answer to a question? It seems to me they ought to succeed on the north slopes of the foothills.—Subscriber, Grass Valley.

With reference to California experience with filberts, we may say that you are now very near the location of the man who had most confidence in them, namely, the late Felix Gillet, whose nursery and fruit garden was at Nevada City, and where you can, perhaps, see the filbert trees which he planted perhaps thirty years ago, or at least can get some local information as to their behavior. Mr. Gillet used to send us samples of nuts from time to time which he produced at Nevada City. Our knowledge is that not one of those to whom he sold plants reported success, and it is, of course, a well known fact that there is no commercial production whatever, although the plants were introduced by Mr. Gillet, by the late W. B. West of Stockton, by the late John Rock of Niles, and by Mr. Leonard Coates, who is still in the nursery business at Morgan Hill. The inference that because we have a wild filbert growing in California, the cultivated varieties would do well, seems never to have been justified, and we are not sure whether an early suggestion to graft the cultivated varieties on the wild bushes was ever carried out or not. Quite as early as that, the inference was also made that the place for filberts is just as you have yourself concluded, viz: that filberts might be grown on the shady hillsides, and this has been tried in the Sierra foothills and in the foothills of the Coast Range. Certainly the plants have come nearest being satisfactory, according to Mr. Gillet's samples and reports, in your immediate vicinity.

Working Over Peach Trees.

To the Editor: Can I make a success in grafting or budding plums on six-year-old peach trees, as I have some that are showing up to be seedlings since they have come into full bearing, and what kinds would be best for family use? Could I graft prunes, apricots, or pears? Could I graft English walnuts and make a success of it? What time would be the best to graft same, as this is my first experience?—Subscriber, Modesto.

You can work all kinds of plums and apricots on the peach, but no pears nor walnuts. It is not easy to graft into peach wood by the common method of splitting the stock. It is better to cut or saw into the side, fit the scions well, and use a waxed band and wax over the top well, and watch to see the cover keeps complete. Put in grafts when the buds begin to swell. It is easier to cut off your peach trees about a foot above the forks and bud next June into the young bark of the new shoots which are forced out—selecting those best placed to give the top a good shape and removing the others. The buds ought to start and give you some growth on the new top this summer.

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Cultivation of an Orange Grove.

[By the Associate Editor.]

If one investigates the methods used in handling soil and water on the different orange groves in any district, he will find a great divergence in ideas, though there is enough leaway in method to permit two different methods both to be right, provided there is no conflict between underlying principles.

The owner of one of the finest young citrus orchards in the Lindsay district is responsible for the following practices, which the condition of his trees makes to appear good. It is on red hog wallow land about a mile from the hills. This land was thoroughly leveled and hardpan and subsoil broken by heavy charges of dynamite to a depth of eight feet and large quantities of stable manure applied. The water sunk away down, carrying the plant food with it and the trees just hummed. In fact they made such a vigorous growth that they entered their dormant period much later than most trees and ran a good risk of frost injury, although the water was taken off them as soon as other groves. There is nothing like providing a good, deep soil for the roots to get into if one wants trees to thrive.

The cultivation and irrigation is closely related in citrus groves. In this clean cultivation is practiced all the year, although natural vegetation is permitted with the winter rainfall. This means that there is no tangled cover crop to turn under and plowing is unnecessary. Instead, a four-horse Planet Junior cultivator is put on, and since the ground is always kept loose, it can do all the stirring necessary. The lack of cover crop is made up by heavy applications of stable manure. No hardpan can form by this method, for the furrow is moved slightly to the side with each irrigation and in the course of the year every bit of ground has been broken up by the furrower an inch or so below plane of cultivation with cultivator. The mulch kept is six inches deep.

Occasionally it happens that disc harrow is necessary. This is used when there is too much land to cultivate after an irrigation in proportion to the time to cultivate in. In such a case the disc harrow is put on to stir it up before it gets a chance to cake, and afterward the cultivator is put on to get deeper than the disc would.

In this grove special attention is given to irrigation. One of the most common faults is for the furrows to break and make puddles over the orchard. This is bad. The top don't want water, but the subsoil where the roots work does. It is a waste of water through excessive evaporation. It also gives an uneven distribution of water. Furthermore such puddles keep the cultivator off for a long time and by the time these are dry enough to get on to, the rest of the land is too dry. From all respects, saving of water, even distribution of water, good cultivation, condition of soil, such irrigation is a bad thing. The proper idea is to have level land, straight furrows of even depth, to have all the water sink in evenly, and to permit cultivation to start soon and act uniformly.

The intention in this grove is to give more frequent and less abundant irrigations, about an irrigation every 20 days instead of once a month or six weeks. It is believed that the trees will do better with this fairly uniform moisture content rather than being in wet soil the beginning of the six weeks period and being on the edge of real need at the close of it. Inasmuch as the common belief that the trees prosper if the soil will take sufficient moisture to make frequent irrigations to all appearances unnecessary, the experiment should prove instructive and interesting.

Cultivation and gumming are closely related, for when the soil works over to cover the union between root and top, in other words, the point of budding, gumming is encouraged. In planting, the stub should be above the surface and facing southwest for if on the shady side of the tree moss and dampness might get in the stub and ruin the tree. The danger from shade, of course, endures only until the stub is grown over with clean bark. Trouble from soil covering point of union will develop at any time.

Under ordinary cultivation the soil works up against the trees and is likely to cover the point of union unless something is done to stop it. If one goes into a citrus grove in the fall he is likely to find little humps or rises in line with the trees that run parallel to the irrigation ditches, so that the land in the center of the rows, where irrigating furrows have been, is lower that in line with the trees. The only way to stop this is to cultivate crossways more than usual. Besides, in the grove described the land is thoroughly dragged every year to reduce it to its original level condition.

There is a great difference between orange groves according to method of care. Pruning and such things count, but probably nothing is half so important as the condition of the soil and the proper distribution of moisture. Methods have to fit in with plan of culture (cover crop and such) and the nature of soil. In this case the above rules have proved highly satisfactory.

ALFALFA CULTIVATION AND SEEDING.

To the Editor: I have read articles in the Rural Press on "Putting Alfalfa in Right," but did not get any knowledge about cultivating alfalfa. Does it do alfalfa much good? I have a stand of alfalfa that is five years old, very thick and fairly clean. I am doubtful about using the cultivator. I have a Deere cultivator, but it pulls up many good healthy stalks, and very many that have been eaten off by gophers and had again rooted. It seems to do about as much harm as good, by thinning the stand. Of course it gets away with weeds. Will roots revive that had the tops broken off? How much frost and freezing weather can young clover plants bear? I would like to plant on bare spots in my year old alfalfa field, at this time of the year if the plants can withstand a winter like the last. The ground was frozen yesterday morning here.—F. H., Woodland.

[Cultivating alfalfa is a good thing for it. The disc harrow is often recommended, but probably the spring tooth has more friends for fall cultivation of alfalfa than any. The alfalfa renovator with spikes in disc form is well thought of, but some say that after frequent use the soil is packed, while cultivation to loosen up the soil is commended. A breaking up of the alfalfa crowns often does more good than harm though for a time it looks like destruction. If an alfalfa stand is in first class condition perhaps cultivation will be unprofitable, otherwise it is to be recommended. If only a little of the crown is removed alfalfa will come up. If it is cut off too far down it will not. You will have a hard time filling in bare spots with alfalfa. Planting now is out of the question, for although old alfalfa is quite resistant to cold, young alfalfa is extremely tender and has to make quite a start before it can endure frosts. It must be planted early enough in the fall to get this start or late enough in the spring to miss them.—Editor.]

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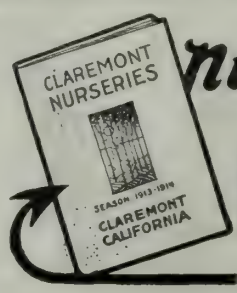

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Rules for Grape Pruning.

To the Editor: I have a thrifty eight-year-old Tokay vineyard that has always been pruned the usual way—that is, headed out 12 to 15 inches high and then leaving one 3-bud spur for each year old. This style is all right for most of the vineyard, but there are spots where the clusters of grapes are so compact, thick and hard that they cannot be packed very well—besides lacking in sugar and color. There is always an immense growth of cane and leaf, making a dense shade which may hinder coloring and sweetening. To overcome this, I have thought of staking and tying up one of more canes so as to give more bearing wood and sunshine. What do you think or would you suggest?—P. A., Lodi.

REPLY BY PROF. F. T. BIOLETTI, UNIVERSITY OF CALIFORNIA.

These vines appear to have two defects due to unsuitable pruning. First, the number of fruit buds has been too small. This results in excessively large and compact bunches. Second, the heads of the vines are too compact. This results in imperfect and irregular coloring and ripening.

To tie up fruit canes, as Mr. A. proposes, would overcome both of these defects to some extent, but would introduce others. If the tied up canes produced a large number of bunches, as they would in some cases, the grapes would tend to be small and liable to sunburn, as the main part of the crop would be concentrated on these canes instead of being distributed over the vines as it ought to be. If the canes instead of being distributed over the vines as it ought to be. If the canes produced no more bunches than the spurs, as they would in some cases, owing to the tendency of the lower buds to remain dormant, they would produce a large growth of foliage which would unduly shade the lower part of the vine and prevent the proper ripening of the grapes there and the production of good wood for the following year.

A better method would be to leave a larger number of spurs and to make these spurs one or even two buds longer. This would give the required extra number of fruit buds and spread the vine so that the branches would not be too closely compacted together.

The rule "to leave one spur for each year of age of the vine," is good as a general average but must be modified for each individual vine. The rule of three buds for each spur is also good as an average but must also be modified for each individual spur. To get the best results from a vineyard, each vine and each spur must be given the burden it can bear. A strong vigorous vine can produce a large crop of grapes, it must therefore be given an opportunity to do so by leaving a large number of spurs. A weak vine can produce only a small crop of good grapes; the number of spurs therefore should be in proportion to its strength. The same rule applies to spurs. A very weak spur should be shortened to two or even one bud; an average spur to three buds, while an excessively vigorous spur should be given four or even five buds. Fit the burden to the back.

PURITY OF WATER SUPPLY.

To the Editor: I wish to know whether a cesspool dug to gravel and a few feet from water table would have the slightest effect on the water of a drinking well 100 feet away? Would there be danger to health and fear for the typhoid germ. Is it sanitary to keep an elevated water tank covered that is used for household purposes and drinking? My tank is covered with a board cover laid loose over the top. Will the water keep pure and sweet?—Rancher, Yolo County.

Putting in a cesspool under the conditions you describe is highly inadvisable, as in the loose gravel there is quite sure to be a movement of injurious material from cesspool to well and typhoid could easily be carried to users of the water. If, however, you have a bored well and the gravel strata with which the cesspool connects is cased off, there can be no contamination and it will be perfectly safe to use this water. In our issue of January 25 and some subsequent issues the matter of sewage disposal from the farm house was discussed. Possibly you could get bulletins from the State Board of Health that would give plans for sewage systems in detail.

It is sanitary to keep a tank covered. Better to do that than to allow it to remain open to injury from dust, birds and other sources of contagion. Whether the water remains pure and sweet or not depends more on the amount used than anything else. If the water is frequently renewed, your way of keeping it will give as good water as any way.

PRESERVING PINE POSTS.

To the Editor: Will a pine post 4x6 or 4x4 be preserved indefinately if it is imbedded in concrete? I have been told that water would run down between post and concrete and cause the post to rot. I have several hundred of such timbers and would like to use them for posts of a fence.—H., Woodland.

The pine posts will rot off quickly if set in concrete. Your best method of preserving them would be to dip them in crude oil, tar, or some such preservative to a point above the ground. This would also be much cheaper than setting in concrete.

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Good Points on Pears.

To the Editor: Referring to Mr. Blochman's recent inquiry regarding the Easter Beurre pear, I have been waiting to see if Edward Berwick would not say something about it. As is well known, Mr. Berwick for many years owned and handled one of the best winter pear orchards in California, which still remains in his family. The writer had the pleasure of operating this orchard for several years, and may therefore speak from a somewhat intimate knowledge of it and of other orchards.

On the Berwick place and elsewhere in the Carmel valley the Easter Beurre is a heavy and regular bearer, being more satisfactory in this respect than the Winter Nelis planted side by side with it. It does not, however, command as high a price as the Nelis. In my experience the Nelis usually brought about 25 per cent more than the Easter in the New York market, both varieties being sold by auction out of the same car on the same day. And in my humble judgment, with all respect to Mr. Blochman's opinion, this difference in price does not fully represent the difference in quality of the two pears as table fruit. But the Easter keeps! Oh, yes; it surely excels in that particular; hence its name! And baked, with a touch of lemon to bring out the flavor, it is delicious. In my household, which dotes on pears, we eat the Nelis out of hand as long as they last, then fall back on Easters by the oven route. When the Easters will keep no longer, we can what remain (baked) for later use. On the warm days of early summer these canned, baked Easters we find most delectable. But the Easter eaten out of hand? —not for ours!

To those who prefer delicacy of flavor, with a slight acidity, the P. Barry pear is to be commended. There is also an attractiveness about its slender form that appeals to many. In fact, the Barry is truly the esthete among winter pears. It is a good keeper, excelling the Nelis in this respect, but inclined to shrivel in a dry atmosphere. Baked by a skillful cook, the Barry develops considerable richness and translucence. Whatever variety be hailed as queen among winter pears, certainly the "P." in the name of the Barry should stand for Princess. In my experience the Barry sold even higher than the Nelis in New York. It is a good bearer for the size of the tree, but on account of its slender growth and somewhat dwarfish habit, the yield per acre is not large.

In the course of years of experiment-station work, the writer had occasion to sample many varieties of pears: summer, fall and winter. Among earlier ripening kinds, there is grateful recollection of Howell, White Doyenne, Gansel's Bergamot and Louise Bonne, varieties not generally grown on this Coast, but which every home orchard, at least, should contain, besides the better known Duchesse d'Angouleme, and the spicy Seckel. In the late-maturing class the writer's affections center on the Winter Nelis, although the Comice is perhaps equally good, and Glout Morceau makes a strong bid for favor. Beurre Clairgeau, though reckoned a winter pear in the Eastern States, is a fall fruit in California.

J. H. BABBER.

Livermore, Cal., Dec. 14.

[These notes are certainly widely valuable. If there is any dissenting opinion (for such is admissible on a matter of taste), we should like to have it. As for the "P." in P. Barry: it stands for Patrick, the famous New York pomologist in whose honor the originator, the late B. S. Fox of San Jose, named his seedling. —EDITOR.]

KILLING WEEDS IN WALKS.

The best way to dispose of weeds on gravel walks is possibly to poison them, provided one wants an absolutely weed-free piece and too much hoeing would be necessary to keep them down. A recent experiment was tried with different strengths of poison. The strongest was 1 lb. arsenite of soda to 2 gal. of water; next, 1 lb. to 4 gal.; then 1 lb. to 6 gal., and still another more dilute. The material was applied with a sprinkling-can, and the first two killed the weeds utterly, while the weaker solutions did not do so, though they checked growth materially. It is stated that if the affected path can be raked prior to spraying, so much the better, as this operation exposes the roots. The most opportune time to spray is in the heat of summer, and if the work is done toward nightfall, the poison has a better chance to soak in during the night and get at the roots.

A good deal of movement is reported in farm properties. A. Schliem and C. C. Pond of Riverside have traded $100,000 worth of property, the former securing much alfalfa land near Perris, the latter citrus property. The 288-acre ranch of S. M. Read, near Cloverdale, has been sold to Mrs. Josephine Knittel. The Premo Bros. of Porterville have been adding to their alfalfa holdings near Pixley. The Pentz ranch, Butte county, has been sold for stock-raising purposes and subdivision for olive planting.

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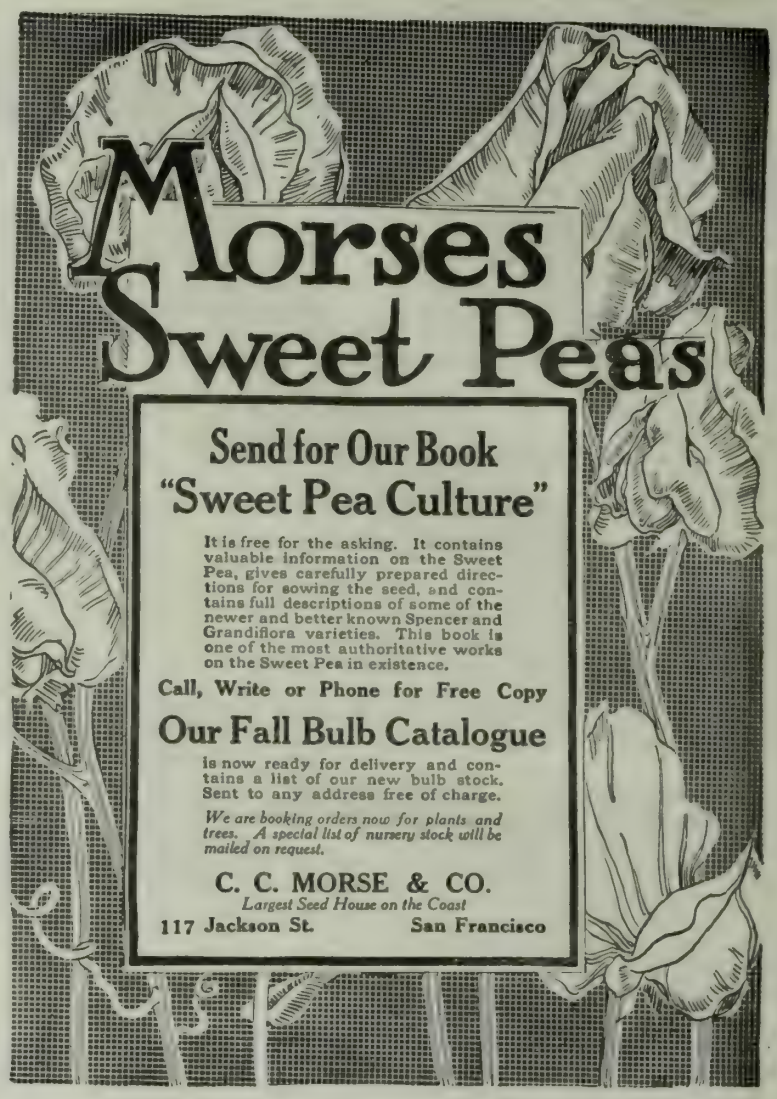
"Well," said the young man, "Grace before meat."

And he immediately went in search of a minister.

From several places alfalfa cuttings are reported for December.



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Renewing Frosted Olive Trees.

To the Editor: I have an orchard of Ascolano olives, about five years old at the time that the freeze hit them last winter. They had been doing nicely. They seemed to die back gradually after the freeze—not all at once as the lemons did—and are now dead to the ground. I allowed suckers to come up from the butts below the ground, and some are now about four feet high and as thick as your thumb. I find now that the suckers from some of the trees are Ascolano like the parent, and those from the rest are of another variety. I plan to thin out around each tree, gradually, to the one best sucker and make a tree of that—to be grafted, of course, in the case of the off varieties. Would you be kind enough to comment on this method and tell me the best size, time of year, etc., for grafting olives? Also can you tell me how or where to find out how best to start young trees from the Ascolano suckers that I pull off? I understand that the suckers with the root-bark already on them make especialy good cuttings. Is this an unfavorable time of year to do this work and to start cuttings?—M. C. A., El Cajon.

ANSWER BY PROF. F. T. BIOLETTI, UNIVERSITY OF CALIFORNIA.

Your correspondent's method of renewing his frozen olive trees from sprouts coming from the root is quite practicable if the trees are not grafted or if the sprouts come from above the union. Where the sprouts come from below the union of grafted trees, the new trees will have to be grafted. This is best done in the spring, in March or April. It can be done next spring or later. It would be well to allow three or four sprouts to grow. This would help to heal over the old stump and give several chances for grafting. Next year, after the grafts have all grown, all should be removed but one.

Suckers, with a little of the old root or stem bark on, root very easily and make good trees. If the frozen trees are cut off near or below the surface of the ground and the roots are healthy, they will send up a large number of suckers. If soil is mounded up around the base of these suckers they will make roots and they can be removed the next season to the nursery, one sucker being reserved to renew the tree.

BISMARK APPLE AND DWARF TREES.

To the Editor: Noting in your issue of November 8 that an Upland reader desires information in regard to Bismarck apple, Dwarf apple and Bartlett pear on quince root, I contribute these notes:

A few years ago J. A. Sanford, of Stockton, sent to New Zealand and got buds of the Bismarck apple and turned them over to us to work on stock which we had. In the orchard these bore a few apples the second year, and this season our oldest tree, a three-year-old (in orchard) had 72 apples on it, the smallest weighing 14 ounces and the largest 24 ounces; quite a crop for such a young tree. The apples were beauties in color and were most excellent cooking apples, falling to pieces as soon as heated through. None got ripe enough to test their eating qualities, as visitors always had to have samples to show their friends, and several were sent to Eastern States to show what apples would do in the Sacramento valley. If we had had an acre of trees in bearing we could have sold them at a good price to our local people. The fruit would need be kept off the tree till four or five years old, to get a large tree. We have bought trees supposed to be the same variety and these trees are now six years old and have not produced a single fruit.

We have never seen a dwarf apple tree in the State. Some years ago we experimented with apple on quince root, but with one exception they did not make good unions. The Ben Davis made a perfect union with the Angers quince stock and grew till we took it up and gave it to a neighbor, this last spring. No doubt other apples could have been double worked on the Ben Davis and have been a success.

About four miles from us there is a Bartlett pear orchard, of ten acres or more, that one-half is on quince root (not double worked); the orchard is 20 years old, and the quince bears more than the standard in most instances, and, strange to say, most of the pears produced are red-cheeked pears, while we failed to find them on standard root. The pears from the quince roots are sold under the brand of "Sun-kist." TRIBBLE BROS.

Elk Grove.

OUR PORTUGUESE NOT AN ENGLISH HORSE BEAN.

To the Editor: We are enclosing you a few genuine English horse beans, which we have just received from a brother in England. The beans advertised and sold as English horse beans in California are not horse beans at all; they are a variety of Broad Windsor bean, which is largely used in Great Britain and some European countries as a garden vegetable. In England the Windsor Broad bean is always used in connection with bacon, making the dish known as "beans and bacon." The beans in common use in the United States are very little used in England. Years ago some enterprising Yankee consigned a shipment of Boston pork and beans to an English wholesale grocer; as they could not induce the public to buy them, they were reshipped to Boston, showing that prejudice exists on both sides of the Atlantic against anything people are not accustomed to. The Broad Windsor bean is an excellent vegetable when used green, boiled with or without bacon, and in this State can be grown in winter when other beans cannot. If the unripe Windsor beans are skinned and eaten raw they will be found to have a sweet nutty flavor equal to the Brazil nut. Our Spanish and Portuguese friends know their value as a food and use them largely, but the beans they grow are not equal to the best varieties of Windsor bean grown in England.—S. and B. G. HAIGH, San Jose.

[You are perfectly right that what we grow as Portuguese or horse bean is not the English horse bean at all. Whether it is called a "horse bean" in the south of Europe, whence it came to California in early days, we do not know. It is, as you say, of the type of the English broad or Windsor bean, but will probably go as a "horse bean" with us indefinitely. There are better broad beans, however, and they should be better known.—ED.]

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Horticulture at Healdsburg.

[By the Associate Editor.]

Before you have talked very long with anybody from Healdsburg you are sure to be gravely informed that Healdsburg prunes are shipped in large numbers to San Jose and used to face Santa Clara prunes. Without referring more to this matter it can be used as an illustration of the high regard for the prune in the Healdsburg district. This high opinion of the prune is a result of both the quality of the fruit and the profits in the industry.

Healdsburg is in the Russian River Valley in northern Sonoma county. The valley widens out here to take almost circular form and the hills around the edges are low and with small slopes, rather than high and steep, as are many of the mountains bordering the Russian River valley. Practically all of the valley near Healdsburg has long since been planted out to fruit, vines or hops and only the limited area prevents this district from being one of the leading fruit districts of the state in quantity, as it appears to be in quality. In spite of its limited area the production of all tree fruits outside of apples from Healdsburg is approximately equal to the production of the rest of Sonoma county.

Of the fruits prunes are grown much in excess of other varieties, French on the floor of the valley and some Imperials around the edges. Pears are grown on land too heavy for prunes. Not much shipping fruit of any kind except pears is grown. Wine grapes are also produced in large quantity in the district, though the value of the output is rather less as a rule than the value of prunes. The third great crop is hops, which are grown on rich bottom land. This is the leading hop district of Sonoma county and Sonoma produces a third of the hops of California. Nothing else approaches either of these three in value or acreage.

Prune Quality.—From the value per acre standpoint prunes merit a high regard. Such a thing as a crop failure is practically unknown, the yield is very large, the quality exceptionally good and sizes large. This year the crop is quite a bit below normal, as is the case most everywhere else, but not on account of weather conditions, lack of moisture and so on, but on account of producing two bumper crops the last two seasons, a little rest being essential.

S. L. Wattles, for example, has 31 acres in prunes and harvested 61 tons of prunes, dried, which he states is only between a third and a half of the normal output. That is no slouch of a crop at the worst of it.

As far as quality goes, it is a fact that no better prunes are produced anywhere, not saying that others may not be as good, and full price is secured. And when it comes to size, orchard run is said to average about 50's, in other words, orchard run is about a cent and a half more than basis price and good yields, good sizes and good quality always give big returns.

The quality and quantity are usually attributed to soil, though climate must share much of the credit for quality at least, as wonderful soil can be found in almost every district in California and good prunes do not always come from good soil. The soil is, however, just what prunes like. It is a deep, rich sediment, mostly a medium or a heavy loam, well supplied with moisture and humus. Several streams enter the Russian river near here and they have helped to deposit sediment over the level bottom lands.

The one thing that the country never has is a deficiency in rainfall. Being in the north central part of the coast and surrounded by mountains, enough clouds are caught every year in the mountains to give a good precipitation and although there was less than usual last winter, there was all that trees and pastures needed. All through the year the air is probably a little moister than in most of agricultural California, evaporation is not so rapid and the quality of the prune therefore a little better. Prune growers on account of more frequent rainfall than elsewhere have to run a greater risk during the drying season than in some other prune districts and therefore find it wise to have facilities for artificial drying. These seldom have to be used, though they are required enough to make them a good investment.

This is a district where citrus fruits thrive and seldom receive frost injury, so frost does not bother prunes either and the only crop destroyer are heavy rains all through blossoming time, which are very rare and have to be put up with everywhere.

Pests likewise are not troublesome. Thrips have been found, but never have been seen to do any damage and need not be considered as possible pests. The peach root borer does not exist there. Spraying may be done occasionally for moss and the apricot scale is getting worse and may need control measures, but that about exhausts the list of prune troubles.

Apropos of the recent prune pruning discussion in these columns it is a fact that a more open system of pruning is practiced than in the Santa Clara valley or most prune districts. The shortening up of fruit wood is not done as is the case on peaches and apricots, but cutting back to a bud or lateral is frequently done. As a result the trees are more open than in most places and the leaders, instead of being straight and bare at the bottom and brushy at the top, are uneven or jointed. It is kind of a compromise between the no pruning system and the shortening back system on some other stone fruits. It is improbable that large sizes and heavy yields are due specially to pruning like this. They are more likely due to rich soil and good climate, with help from pruning.

This district is one of the leaders for Imperials. These do not do well on the floor of the valley, as they do not sugar up well. They require a lighter and earlier soil, such as is found on the hillsides adjoining the valley. Under these conditions they bear as well as do the French prunes and their larger sizes make them very profitable. Except occasionally, however, the hillsides do not seem to be utilized for prune growing unless very close to the floor of the valley.

Hops.—Owing to the way that hop prices dance up and down this crop is not always popular, though prices the last few years have made them better liked and they would have much of the average now given to fruits if prices were more uniform. Only the best soil is worth using for hops and this is best for prunes too.

The cost of getting hops into bearing is about $100 per acre and as a rule the larger the acreage, the better. With prunes it don't matter how few a man has, his acre profit will be the same, and the average prune acreage is rather small here too. A man might keep income and expenses together with five acres of hops when prices were all right, but he would not make money until he had say ten acres and not really get the acre profit he should until he had four or five times as much.

Usually not more than half a crop is secured the first year, though cases have been known where a ton per acre was harvested. This is, however, about all that can reasonably be expected for a good hop yard in full bearing and is what Edward Quinn, one of the most successful growers of the district, secured this year from about 71 acres, including some rather thin soil. The cost of production is about 10½ cents per pound, including rental value of land. The average price for a long term of years, not including the last few seasons, which have been very much better, has been about 14 cents. This year they are bringing about 25 cents. Do your own arithmetic on the proposition.

Although prunes, hops and wine grapes are the standard crops and take up practically all the acreage, other crops do as well as these. Alfalfa, grown without irrigation, is produced here and there for the farm stock, as is corn, which is well suited to the climate and soil and commonly goes in while an orchard is being started. As fine, meaty tomatoes as can be found anywhere are occasionally grown. John Shack last year took off 42 tons from 1⅞ acres, 18 tons the first picking, and the vines were still doing nicely when the frosts put an end to their activities. This year the season was not as favorable.

The only thing that keeps the district from being more noted is its moderate size and its merits are indicated from the fame already achieved in spite of restricted area. It is a region of small farms and the standard of farm practice is high and the fertility of the soil is being largely retained. In every way it is one of the best California farm districts.

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Mr. Steude's Way With Olives.

Home picklers of olives will be interested in the account of a small scale operation which Paul H. Steude gives the Yolo Democrat:

This recipe is one of my own invention. I have pickled tons of olives, which sell and taste much better than the commercial article.

I usually use a sugar, vinegar, cider or glucose barrel as olives adopt all foreign flavors from barrels where whisky, brandy or red wine has been.

I take an auger and bore a hole in one end of bottom of the barrel. Then make a long 10-inch point on a broom handle, with which to close the hole. By tapping on the broom handle you can have the lye or water drawn off without getting your hands wet, or letting the olives drop out of the hole.

Olives should be cherry color for pickling. In this way they have a good flavor and are appetizing. I consider the Mission olive the best for home use. It is best to not mix the olives from different trees as some trees have more bitter ones than others. This accounts for having some bitter olives among the sweet usually found in Yolo and Sacramento counties.

When you pick olives get them into clear water as soon as possible. Never use ditch or dirty water as olives absorb the mud and are easily spoiled. Neither use well nor filtered water. Olives picked into lug boxes will mold in 24 hours.

Add 1 pound concentrated lye and 1 pound pure salt. Dissolve in 2½ to 3 gallons of water, and see that it is thoroughly dissolved, then skim. Some cook it, then skim. Then drain all the water from olives and tighten the broom handle and pour the preparation of salt and lye over them. Weight the olives down so as to keep them covered. In this way in 12 to 48 hours the bitter vestige will be entirely removed from them. In leaving them in I draw off the preparation and fill in on top again about once or twice a day to find out if the bitter taste is all out of them. If you see milk on them, by cutting them open you find the bitter still.

You can take a few olives and place in clear water and wash off good and bite, being sure not to keep your lips near them, and spit out at once and rinse your mouth with clear water. As soon as the bitter taste is out turn in clear water. The first few days change 4 or 5 times a day, and 2 to 3 times a day for about 10 days or till the vestige of lye is all gone.

Should they get a little soft take a strong salt brine and place over them for 24 hours and then wash in clear water afterwards. I usually have olives to eat in one week from the time they are picked, but there is still a little lye in them.

To keep the olives a long time use a preparation of 12 ounces of salt brine to a gallon, or one that will make a potato swim. Olives should be in a dark place covered with brine or water. By keeping them a long time a scum should rise to the top and should be skimmed off, and the olives rinsed in clear water and put in new brine. If olives are too salty, lay them in water for a few hours and they will be ready to eat.

This preparation is strong enough to take the color out of the dark olives. They will not look as well as the commercial but are far superior in taste. To get a dark color in the commercial olive, the coloring matter has spoiled the taste to a certain extent.

[In this connection it may be stated, as it has been stated several times previously in these columns, that ripe olives can be considerably darkened by exposure to light for a brief time—the olives being taken out of the brine and exposed in shallow traps for this purpose.—EDITOR.]

BLACK MILDEW—STUMP ROT.

To the Editor: I refer to the letter concerning black mildew on grapes printed in your paper of November 8. I have carefully examined vines afflicted this year but am not able to discover any injury from which the trouble could have started. The new wood looks bright and the whole vine as good as any others. There are some vines that are rotted quite badly but these do not have mildew.

I have noticed some of my Muscat vines have a fungus growth on the side. When this is cut away the vine under is found to be rotted and generally this rot extends from the top of the vine. How far down it goes I do not know. I suppose the remedy is to remove the rotten wood and fill up the cavity with cement. It is difficult to get out the rotten wood. How would it do if as much of it was taken out as could well be done and then cement put in? Would the decay continue if the moisture was cut off? The Muscat vines have a tendency to form a cup at the top of the vine and there the rot takes place. Would it be well to cut down the side of the vine to the ground? The rot generally shows on the sides a few inches up from the ground, the wood being solid below it—at least on the outside. Should pure cement be used, or mixed with sand and in what proportion? Could the filling be done now or should I wait till frosts have ceased?

I have Mission vines ten years old, the trunk of the vine being three or four inches diameter. Missions are exclusively a wine grape and here not heavy bearers. I have in mind to graft a portion of them to Malaga. Can I look for success?—W. J. P., Sanger.

ANSWER BY PROF. F. T. BIOLETTI, UNIVERSITY OF CALIFORNIA.

The term "black mildew" does not apply to any known disease of the vine. It is used in different locations and vineyards to describe various symptoms due to various causes, some known, some unknown. The troubles, whatever they are, seem to be confined to isolated and scattered vines. If Mr. Parsons will send samples of the mature canes of affected vines now and of the affected leaves and shoots when they appear, to the Experiment Station at Berkeley they will be willingly examined. Some growers claim to have obtained good results by spraying with Bordeaux mixture in the summer for some forms of black mildew.

The rotting of the stump of Muscat and other vines is very common. It is due to infection by various wood-destroying fungi which obtain entrance at pruning or cultivation wounds, especially on weak vines. Tree dentistry is too expensive and uncertain on ordinary vines to be advisable. Many vines with hollow stems bear well and live long. It appears to depend on the kind of fungus present. If the fungus starts in the roots (root-rot) the vine cannot be saved. If it starts in the top the root is usually sound. In the latter case the top can be renewed by growing a sucker from the root one year and sawing off the old stump the next year.

Mission vines have strong roots and can be successfully grafted with Malaga or any of our ordinary varieties. The grafting should be done as deep in the ground as is practicable with a long three or four bud scion in order that the scion will form its own roots.

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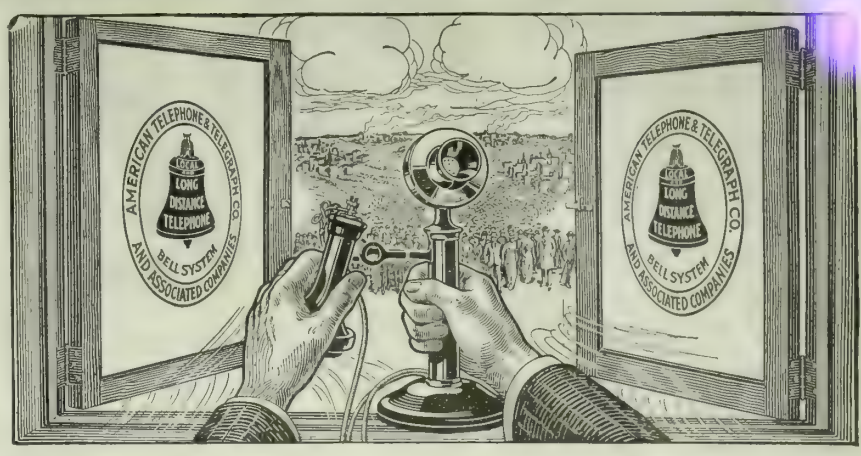

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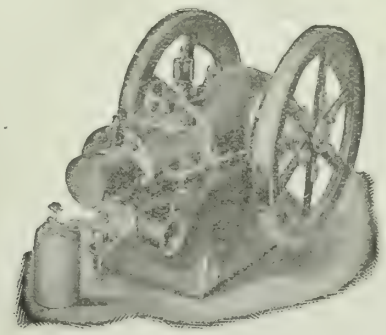

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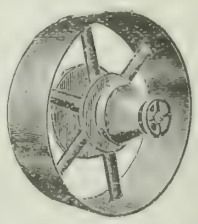

The Havana Double Grip Friction Clutch Pulley. The most reliable clutch ever made. Every engine user should have one. It is reliable, safe and cheap.

Commercial Iron Works

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FIRST PREMIUM, CALIFORNIA STATE FAIR, 1913

WHY does our **A-I Surface Irrigation Pipe** stand the hard usage to which it is subjected better than any other pipe, riveted or otherwise?

BECAUSE it is made with a lockseam set down under 3500 pound pressure, which requires no soldering to make it water tight (solder will break loose by jarring and hard knocks).

A-I Pipe was awarded first prize at Fresno and Santa Clara County Fairs in 1912.

Send for new catalog with prices and valuable information.

AMES-IRVIN CO., 8th and Irwin St., San Francisco.

AGRICULTURAL REVIEW.

News of Field Crops.

The Alpaugh (Tulare county) Beet Growers' Association has been organized by growers of 2200 acres of beets contracted to the San Joaquin Beet Sugar Company.

The Southern California Beet Growers' Association at a meeting decided to accept no less for their beets than was given last season. If any price reduction is made by the companies, the land will be given to other crops.

The sugar factory at Fallon, Nevada, will be operated next year.

Enough Turkey red wheat to plant 5000 acres has been secured by farmers in northeastern California, southeastern Oregon and Nevada.

J. F. Lloyd of Dinuba has harvested 60 tons of fodder and 12 tons of seed, it is said, from six acres of Egyptian wheat.

Hop prices last week fell to about 19 cents in Sonoma county, but were not expected to go lower.

Fifty acres are to be planted to peanuts 14 miles southwest of Hanford.

An effort has been made to have farmers near Selma plant out ramie.

The celery crop of the delta country is stated to be about 1500 cars this season.

A method of threshing rice on sleds has been devised, which was made necessary on account of the mud.

Grape and Raisin Notes.

The 1913 raisin crop is now stated to have been 63,000 tons, of which 36,000 have been shipped, leaving 29,000 tons to be disposed of.

The George West & Son Winery is offering to pay off all installments on the Lodi Co-operative Laundry if given a certain discount.

The Associated Raisin Co. is working to obtain subscriptions to make capital of $1,500,000. The proposed Dried Fruit Co. to handle peaches and other fruit in the raisin district is meeting great approval in its campaign for subscriptions also.

A sale of 160,000 gallons of wine at 21 cents has been reported.

The Ukiah Grape Growers' Association has decided to join with the California Grape Growers' Association in working against having a "dry" State. The Sonoma County Grape Protective Association has been formed for the same purpose.

News from Orange Men.

Orange shipments north of the Tehachapi have slowed up greatly, owing to poor markets. As a result, the fruit to be shipped from now on will be of fine color and quality. By December 18, 3488 cars had been shipped from Tulare county.

The oranges in the south have colored nicely and will go out in fine condition, though as yet few shipments have been made.

A new trouble has appeared in Tulare county called "green spot" from the fact that on mature fruit there suddenly appears a circular patch of green, which decreases the value of the product. The cause of the trouble is being investigated.

John Hansen, of El Centro, is making a two-acre experimental planting of oranges on the success of a few home trees, believing in the possibilities of the Imperial valley as a citrus district.

General Agriculture.

Roy K. Bishop has been reappointed horticultural commissioner of Orange county.

The walnut crop of Goleta, Santa Barbara county, is about 800 tons.

Tree planting has commenced in the Chico district, 16,000 to 18,000 trees already having been inspected. Prunes are most popular.

The final estimates of the U. S. Crop Reporting Board for the year show corn less than in 1912, wheat greater, oats less, barley less, potatoes less, sweet potatoes more, hay less, cotton less, sugar beets greater. The value of the crops named, including some not named, was $4,940,301,000, against $4,589,529,000 in 1912 and $4,589,529,000 in 1911.

The date of the Cloverdale Citrus Fair has been fixed for February 18 to 23.

It is reported that Senator B. F. Rush is having a bill prepared which will put all branches of agricultural work directed by the State, with the exception of the College of Agriculture, which is part of the University of California, under one department, to be known as the State Department of Agriculture. In this would be the Horticultural and Viticultural Commissions, State Veterinarian, State Agri-

TREES

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We grow everything that grows
Apples Apricots
Pears Plums
Prunes Peaches
Walnuts Figs
Oranges Lemons
Pomelos
Palms Cypress
Evergreens
Shrubs Roses
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Now is the Time
to make reservation for this season's planting

No matter what you intend planting this season—and it is going to be SOME season—you will gain an advantage by getting in touch with us at once.

To those thousands who have patronized these nurseries during the past thirty years, it is only necessary to say that we have growing this year an exceptionally fine stock—in fact, the largest and best we have ever had. We are prepared to take care of your orders promptly and in good shape. Our prices are the lowest that can be made for trustworthy stock.

Those who have not yet bought deciduous or citrus fruit or ornamental trees, plants, vines, etc., from the Fancher Creek Nurseries should inquire as to our standing and reliability before purchasing elsewhere.

GET OUR SUGGESTIONS—FREE

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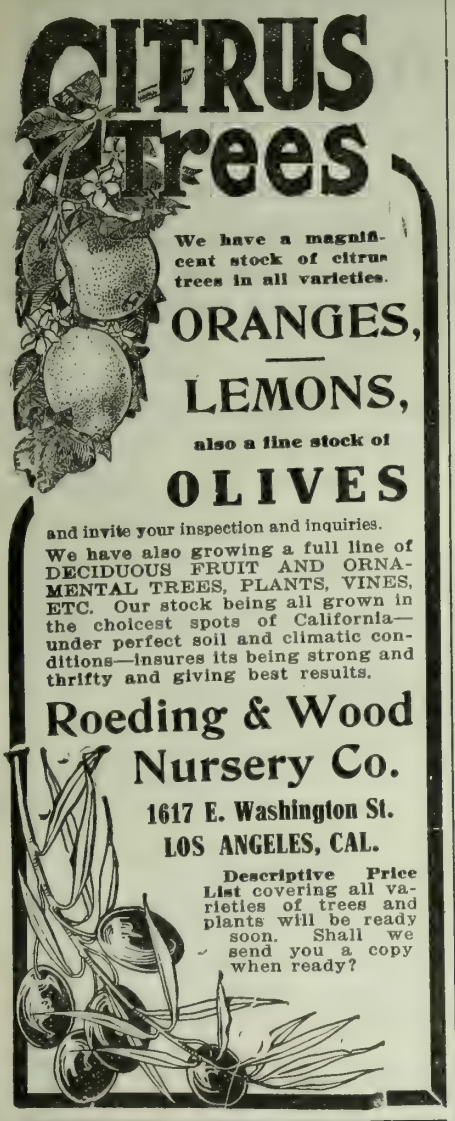

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All Varieties.

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Investigations into methods of cleaning raisins for seeding show that the water method is preferable to the steam method, as it is quicker, cheaper, and does better work. The steam method, however, leaves on the bloom, which the trade likes, while the water removes it. Efforts will be made to see if water-cleaned raisins will not be more acceptable than those steam cleaned. Investigations with dried fruits show that altnough all other dried fruits lose weight in shipment, raisins absorb moisture from the atmosphere and are heavier at destination than at shipping point.

Owing to danger in the introduction or spreading of insect pests by peddlers handling fruit in Tulare citrus districts, plans are proposed to regulate fruit peddling in certain sections.

Harold Wheeler, of Los Molinos, is to plant 25 acres to pears on the Runyon ranch, south of town.

Financial Report on State Fair.

The financial report of the State Agricultural Society recently issued through the secretary, J. L. McCarthy, shows the last State Fair to have been a success financially and that the Society is getting in a better financial position. The Society received from appropriations $67,568.89 and from gate receipts at the Fair $78,301.68, with something over $15,000 each from both race entry fees and from concessions, entry fees for exhibits, etc. The total receipts were $157,160.57.

The greatest expenditure was $39,539 for premiums and attractions. There was also $9,300 for the purchase of additional ground, and a deficiency of $15,948 from 1912 to make up. The surplus from the 1913 fair is given as $12,963.46. The Society has been handicapped in much of its work for the State Fair by lack of funds, and as better support by the legislature is given and the Fairs themselves become more profitable, more can be done to make things better for exhibitors and the general public.

The Coalinga Poultry Show.

The Coalinga poultrymen have added another new show to the State's list this year. Among the breeds shown were Barred and White Rocks, Rhode Island Reds, White and Silver White Wyandottes, Buff and White Orpingtons, Anconas, Partridge Cochins, Dark and Light Brahmas, Black, White and Buff Minorcas, White Cochin Bantams, Pekin and Indian Runner Ducks, and Bronze Turkeys.

J. D. Yates, of Modesto, judged the fowls and gave full satisfaction. The members are pleased with the success of the show and will soon fix the date for that of next year.

Irrigation Progress.

The formation of the Tracy Irrigation District has been postponed more or less indefinitely.

The permanent organization of the Irrigation Association of Butte County Irrigation District No. 1 has been completed and the organization of the new irrigation district can progress rapidly.

It has practically been decided to separate the plans for an irrigation district in the Santa Clara valley into two projects, one to obtain water from Guadalupe creek, the other from the Coyote.

The Modesto Irrigation District is to make the head of water 20 second-feet. An enlargement of the district is being urged.

Water has been filed upon at the Sacramento river above Redding, with the idea of forming a district of 235,000 acres in Shasta, Tehama, and Glenn counties.

Odds and Ends of News.

Muzzling ordinances resulting from the rabies scare have been objected to by the Cotati and Penngrove Poultry Producers' Association on the ground that it is necessary to have dogs unmuzzled in order to kill rats and other vermin troubling the poultry.

An effort is being made to have agriculture taught at the San Jose High School.

The State Beekeepers' Association is intending to market all the honey produced by members.

The Northern California Beekeepers' Association is holding the annual meeting in Sacramento, December 26 and 27.

The Porterville Poultry Association has decided to hold a poultry show January 10.

Great destruction to squirrels from recent rains are reported from Santa Barbara county and by spring a big reduction in numbers is looked for in many quarters.

BENEFITS FROM CHOPPED ALFALFA.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

With considerable money tied up in silo filling machinery as is the case with most of those who have built silos during the past year, it is natural for them to want to use the machinery for some other purpose as much as possible.

This is being accomplished very profitably where chopped alfalfa is also used and it is for the above reason that it is thought that more such feed will be used each year, as silos gain in numbers.

As to the merits of this form of feed, it is usually found that a big saving is made through its use as the loss in feeding is a great deal less than when straight hay is fed and the expense of cutting is very little.

R. E. Watson, manager of the Rancho Dos Rios near Modesto, has been chopping his hay for over two years and while he has not kept as accurate data as some might wish for, he states that he considers the saving to be from 15 to 20 per cent. Others report a big saving who have used it, a case in mind being where it was tried for the first time this year. When the whole hay was used the daily waste from the mangers was hauled out each day in a large cart, but since the chopped hay ration has been used this loss has been reduced to the point where only a very small cart load is taken out every other day.

By having the machinery on hand the cost of chopping is very small, an 11-inch cutter being able to cut three-quarters of a ton an hour at a cost of about 15 cents an hour for distillate. Two men are needed to operate the cutter, for which an expense of 50 cents an hour should be added, making a total of 65 cents for cutting three-quarters of a ton, or about 90 cents a ton.

If one gives the chopped hay entire

(Continued on Page 623.)

What's in the Soil?

There's nitrogen, phosphoric acid and potash in your soil. Every pound of butter, bushel of wheat, sack of potatoes or bale of hay you produce and ship elsewhere, takes some of these soil elements away. Every horse, cow, sheep or hog that you sell also carries away a certain quantity of these same vital elements. Each crop produced eats up some of the raw materials in the soil.

You must have those raw materials or you can't go on producing. You must replace the vital elements taken away by the crops or live stock, else you get poor crops and no profit for your labor.

Science has discovered how to replace those elements, what to put into the soil to make it continue to produce profitably. It is simply to put back what was taken from it.

In our packing plant we have a by-product called "tankage"—the bones, blood and refuse from slaughtering. The animals consumed the forage from the soil containing these vital elements. When dried, ground and blended in scientific proportion with potash, the result is a fertilizer which again releases the soluble elements in the soil that produce profitable crops.

The materials in "Gold Bear" animal fertilizers are FROM and OF the soil—they go back into it to again do their work as no other materials can do.

In the blending a different formula is used for different needs. Tell us about your soil; what crops you have raised; what crops you want to raise—and we will tell you what formula you should use.

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Ask for 1914 Catalogue.

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For prices write.

H. A. BASSFORD, Ulates Rancho, Vacaville, Cal.

Making Ranch Butter.

To the Editor: Will you kindly tell me the best methods for butter making on a small scale—how to ripen the cream, at what temperature to churn it, etc.? I have a small hand separator.—S. J. M., Cloverdale.

ANSWER BY ASSOCIATE EDITOR.

The first essential in making good butter is in the care of milk and utensils so that when the cream leaves the separator it will be clean flavored and in fine condition. This cream should be stored in a cool place while waiting for churning, no more souring than can be prevented being permitted until later. Cream from later skimmings should not be added to this until as cool as the other. It should be cooled as quickly as possible by setting can in cold water or in some other way, the cream being stirred now and again until cool. If warm cream is added to cool, it will cause souring and injure quality. No fresh cream should be added later than 12 hours before churning.

Trouble in getting butter to churn in the proper length of time is due to several causes, which being known, can usually be avoided. It is usually due to a viscous condition of the cream, caused by using milk from cows that are nearly dry; churning cream that is too thin or too rich in fat; at abnormal temperatures; over-crowding the capacity of the churn, and churning the cream from one cow. Cream from most cows, however, will churn alone without trouble.

Twenty-four hours before the time for churning, the cream can should be placed where the cream will warm to from 60 to 70 degrees, the starter added and the cream stirred every hour or so until it has ripened sufficiently. It should become smooth and glossy with a clean acid flavor and aroma. Under favorable conditions this development of acid is brought about in from six to eight hours. The cream should then be cooled and held for at least two hours in cold weather and four to six hours in summer; otherwise the butter will become soft and mushy and considerable loss of fat will be sustained in the buttermilk.

The temperature of churning should be between 50 and 60 or thereabouts for the best results, the lower temperatures for summer, the higher for winter, other factors also entering in. Do not fill the churn over one-third full, because if more cream than this is put in the churn it will lengthen the churning period. Churning should cease when the granules are fairly uniform in size and have the appearance of cracked corn. There is greater danger in overchurning than underchurning. Draw the buttermilk through a strainer.

When the buttermilk has thoroughly drained, sprinkle cold water over the butter without revolving the churn until the water comes out clear. Close this outlet and add fully as much water as there was cream in the churn or more. Close the cover and revolve the churn about 20 times and at the same speed as for churning. Allow the water to drain out thoroughly. The temperature of this wash water and the buttermilk should be about the same. The butter when ready to be worked must not be too soft or too firm.

In salting sprinkle the salt solution over the surface of the granular butter. To every ten pounds of butter in the churn mix one pound of dairy salt dissolved in two pounds of water. This salt solution should be prepared at least 30 minutes before using. Close the churn again and revolve about 15 minutes before working. The proportion of salt and water can be varied, also the amount of salt to suit taste of the customers.

Working should be done by pressure only, as sliding the ladle or lever over the surface of the butter will make it salvy or greasy. Butter should be worked until compact, of uniform grain, and the salt evenly distributed and dissolved. Sometimes better results are obtained by partly working it, then letting it stand for several hours and finishing.

To make the starter referred to above skim milk is preferable to whole milk, for the top inch of the starter must be thrown away. Place the milk in a covered vessel where it can be kept at a temperature of 70 or more degrees. Only the cleanest and best flavored milk should be used. When sour it is ready to add to the cream, at which time it should have a smooth, glossy appearance with a clean milk acid taste and aroma. It is easier to get a good starter from milk of cows giving lots of milk than from cows nearly dry. The milk from one starter can be added to another to sour it properly. Use about two gallons of starter to ten gallons of cream, the amount varying with thickness of cream.

All these suggestions may be made for equipment and facilities beyond the reach of our correspondent. Under these conditions they can only be indications as to the proper procedure, and should be sufficient to give all desired information. Clearly, cream kept in clean surroundings and at a moderately cool temperature, say under same conditions as eggs and other food are kept, will sour properly of its own accord, without starter or care for exact temperature and time and whenever it has same quality as cream spoken of above it will be as fit to churn. About the same general directions will hold whether cream is churned in power plant or in stone jar. It is all a matter of judgment, care, cleanliness and taste. Temperature, of course, is a ruling factor. By churning at too high a temperature, or making too soft butter a person can easily get enough moisture in the butter to lay himself open to a heavy fine from the Federal Government, providing he offers such butter for sale.

In giving this answer we have followed largely Circular No. 131 of University of Illinois, Urbana, Ill., which can probably be had on request. This circular goes into considerable detail on Handling Cream and Making Butter on the Farm, but applies more to the man with plenty of equipment for scientific butter making than to the man who has to work with little more than is found in the average farm home.

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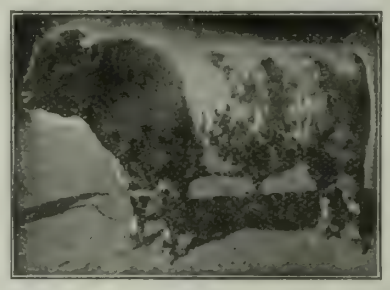

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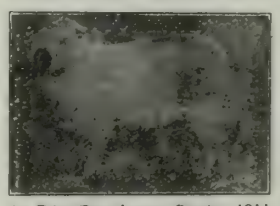

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INTER-MOUNTAIN FAIR, BOISE, IDAHO—Eleven firsts and seconds, sweepstakes over all breeds, champion ram first and second, champion ewe first and second, and first for flock of one ram and five ewes of any age.

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PEERLESS IRON WORKS, Sacramento, Cal.
Mention Rural Press.

Veterinary Notes.

TREATMENT FOR MUD FEVER.

To the Editor: My horse has small sores above his hind feet; the postern I think it is called. My neighbors call the sores "scratches." I notised it two months ago on one foot and two weeks ago on the other. I clean them every day and sometimes put lard on to keep it soft. I have a dirt floor in the stable but plenty of bedding. What can I do for him?—V. N., Stevinson.

ANSWER BY DR. CHAS. C. WING.

The disease is commonly called Mud Fever and is caused by lacteria. If left alone the skin will slough and will be hard to treat successfully. Keep the animal in a dry place; cut off all of the hair, in the region affected, as close as possible to the skin.

Use the following ointment: Carbolic acid 2 drams, oil of cedar 1 dram, sanoline 8 ounces. Apply once daily.

EXPERT EXAMINATION NECESSARY.

To the Editor: Please tell me through your valuable paper what is the trouble and what I should do for a horse that is now four years old. About a year ago he ran into a gate post and hurt his left shoulder. I consulted a local veterinarian who gave me some linement which took the swelling out and seemed to cure the horse. He was not lame any more till this winter. He will be all right for a while, then he will get lame without any apparent cause in the same shoulder that he was hurt in. I cannot detect any swelling or sore spot. I used him all summer but he was never bothered any till winter.—Subscriber, Chico.

ANSWER BY DR. CHAS. C. WING.

I would advise you to have your local veterinarian examine the horse again as it is not the shoulder that is bothering the animal. It is probably tendonitis or navicular disease. A splint could also cause intermittent lameness.

CYSTS IN COW.

To the Editor: I have a cow that I have been unable to get with calf for two years. Several months ago I had a veterinarian examine her and he said she had cysts, later breaking them up, at which time he said that he thought she would be all right. Since then she is always in heat but will not catch and I wish you would kindly give me your advice as to what I should do. As the cow is registered I am naturally anxious to get her with calf.—D. F. C., Modesto.

ANSWER BY DR. E. J. CREELY.

The cysts are probably now tumefied, thereby closing the neck of the uterus. If this is the case an operation is the only treatment. The animal is not always in "heat," but has that appearance, due to the irritation of the walls of the vagina. If there is any discharge from the vagina, irrigate daily with 4% solution of permanganate of potash.

WARBLES IN COWS.

To the Editor: Could you tell me what is the matter with the following cows? I have two which have been covered with boils or something of the kind. They run from the size of an egg to four inches across. When opened they discharge a yellowish bloody matter and some of them will have a small grub about one-fourth inch long and about one-eighth inch thick. The cows have fallen off in milk about half and are losing in flesh. Can you tell me what it is and what to do for them? Have given tonic for boils, but it does not seem to help.—Subscriber, Orland.

ANSWER BY DR. CHAS. C. WING.

Use the following formula for the "boils" after squeezing them out:

Lysol, 2 ounces.
Oil cedar, 2 ounces.
Water, 1 quart.
Mix and apply twice daily.

These boils, so called, are the larvae or embryo stage of the warble fly, the grub itself being the embryo. The fly deposits the egg upon the hair of the cow and the animal licking itself loosens the egg and it fastens to the tongue, thereby gaining access to the stomach, where the capsule surrounding the egg is absorbed, thereby liberating the true egg itself. From the stomach it migrates through the blood and lodges under the skin and grows until it is ready to "hatch," when the "boil" breaks and the embryo falls out upon the ground and matures into the fly, which in turn deposits its eggs upon the hair. Squeeze these grubs out as they appear and crush them, thereby diminishing the growth of the fly.

San Francisco Veterinary College.

LITTLE TUBERCULIN IN SONOMA.

As fair an estimate of tuberculosis importance as has been secured for some time, has recently been obtained in Sonoma county, where a milk supply ordinance made tuberculosis testing compulsory in dairies supplying milk to Santa Rosa. There were 283 cows given the test, the test being postponed on a few for various reasons. In four herds no disease was found, in seven herds from one to three reactors, and only in one herd was there enough reactors to cause remark. In that, of 39 cows, 11 reacted, the cause of this being readily explained.

Samuel Watson, State Dairy Inspector, states that the barn on this dairy was dark, and little sunlight entered to destroy germs. Furthermore it was poorly cared for and the mangers in which mash was fed were uncleaned, everything favoring the development of the disease. Through the other dairies, conditions were normal and exactly typical of dairies throughout Sonoma and Marin counties, showing that tuberculosis under normal conditions is far less serious than previous investigations seemed to indicate. Previous testing has mainly been on dairies where new stock was being brought in continually and forcing methods practiced to exhaust the cattle in a few years, or on dairies where physical outbreaks of the disease caused testing to be done, thus indicating that the disease was far more serious than actually it is.

BELGIAN HARE PRODUCTION.

To the Editor: I am intending to raise some Belgian Hares and would be pleased if you would give me some information about raising them through your paper.—F. C., Stockton.

[About as full an account of Belgian hare production as we could well give appeared in our poultry department of September 20, 1913, and if you save your papers, as it is to be hoped you do, you can look over that. There is also a Farmers Bulletin on Rabbit Raising to be obtained free from Bureau of Documents, U. S. Department of Documents, Washington, D. C.—EDITOR.]

The 10,000-acre Loren Coburn ranch, near King City, Monterey county, will be sold and subdivided.

"As TRUE as the Name"
"AMERICAN" Surface Irrigation Pipe
"Superior from Every Standpoint"

Made in lengths of ten feet each, from a single sheet of galvanized steel, with a heavy taper collar riveted to one end.

"AMERICAN" pipe is made with the "lock seam" or turned joint—contains no rivets, except at collar. A riveted joint has only 70% of the strength of the sheet metal, while a turned joint has 100% or more. This means that "AMERICAN" pipe will last as long as the sheet steel. It is practically indestructible, and it is impossible to produce leakage in this pipe, as the turned seam is DOUBLE LOCKED. It is the pipe you will eventually use. Write for Illustrated Catalog.

We also manufacture steel tanks, wagon tanks, watering troughs, dipping tanks—in fact, anything in sheet metal. We make RIVETED pipe for underground use only.

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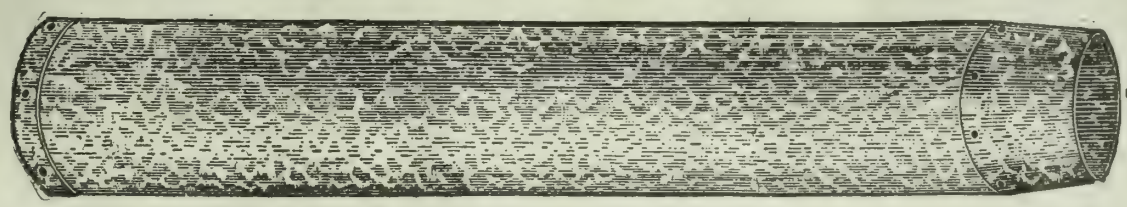

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Hot asphaltum dipped, new threads and couplings, 2nd hand in name only. Prices far below your expectations. Screw casing and standard pipe fittings and valves.

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PACIFIC PIPE CO.

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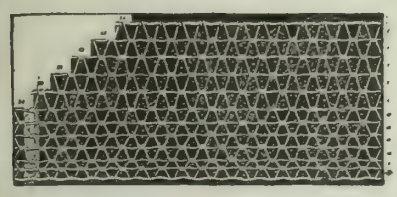

STRONG Because it is made of large High Carbon Steel Wires.

DURABLE Because it is double galvanized and all wires interwoven and securely locked at each intersection.

CHEAP Because it is sold by actual weight at DIRECT FACTORY PRICES.

Write for catalogue and price list.

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JACKSON DEEP WELL TURBINE PUMP

is the most efficient pump of this type on the market and the simplest in construction. Every JACKSON pump means the best possible pumping economy.

The JACKSON is a pump of the highest service giving quality; it's just the pump you need on your farm.

Bulletin No 47-C on request.

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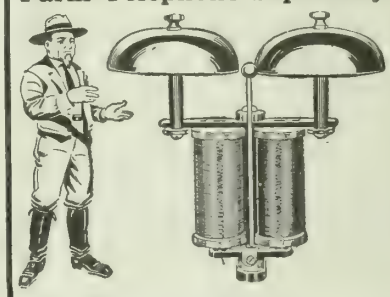
Deep Well Vertical Motor Driven Turbine Pump

Farm Telephone Superiority



Kellogg Ringer
(A ring—not a tinkle)

A ringer is unreliable when it gives out a weak and unwilling ring even when it gets the mighty push of your generator behind it, or sticks and freezes to the coils.

True, the current is greatly weakened after traveling for any great distance, BUT if this subscriber had had a *Kellogg Telephone* with a KELLOGG RINGER, it would have rung loudly and clearly just the same, because

KELLOGG RINGERS

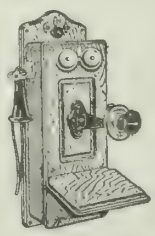
are sensitive to the weakest kind of currents. They're adjusted right in the beginning and stay right to the end.

FURTHERMORE, with our common sense armature the KELLOGG RINGER can't stick or freeze. It gives a reliable, loud, clear ring.

The *Kellogg Telephone*, by reason of its dependable construction is sure to give you uniform, reliable ringing and talking service.

The *Kellogg Telephone* is giving service day and night to many thousands of farm homes throughout the United States.

Why not ask for our free bulletin No. 70 and learn the reason why?



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86 3d STREET, SAN FRANCISCO, CAL.

QUALITY BERKSHIRES

Oak Grove Berkshires are now better than ever. We have five herd boars and can offer you almost any breeding you want.

You may buy cheaper Berkshires than ours, but you will not get better ones.

OAK GROVE DAIRY FARM
Woodland, Cal.

Blake, Moffitt & Towne
Dealers in 37 FIRST ST., SAN FRANCISCO.
PAPER Blake, Moffit & Towne, Los Angeles
Blake, McFall & Co., Portland, Ore.

With the Live Stock Men.

We are informed that another attempt will be made by the Creamery Managers' Association to have all creameries in the State grade their cream after the first of the year.

Many of the cattlemen of Mexico are endeavoring to dispose of their stock in this State. While the quality of the stock is not what feeders like best, it is thought that a good many will buy them, as the home supply is limited at this time.

The army quartermasters who do the horse buying for the government say that there is an alarming scarcity of animals for that purpose.

Numerous accounts have been given in these columns recently relative to the number of dairy cows being shipped to Fallon, Nevada, from California. Evidently they are making good, for of late report states that the Churchill creamery has just received another shipment of 90 head from the San Joaquin valley.

W. A. Young, of Lodi, reports that he is entirely sold out of his present supply of Poland-Chinas, having a good trade since the State Fair.

The Dairymen's Association of Klamath Falls, Oregon, has decided to file articles of incorporation for a co-operative creamery at that place.

The average price for butter-fat paid to the dairymen of Fresno county last month was 40c per pound. The total paid out during the month was about $70,000, or about $10,000 less than for the month previous.

Among those that have faith in the future of the pure-bred Holstein cow and modern dairy equipment is F. B. Glenn, of Jacinto, Glenn county, who has just completed a modern barn and now has 115 head of registered cows.

The Chico Civic Center, which has been actively engaged in cleaning up the dairies around Chico, are offering suggestions as to what the dairymen can do to produce a superior article.

Miller & Lux have made their last shipment of Arizona cattle for the year, having recently shipped a large number from near Nogales.

Due to a slight decrease in production, the cream checks of Tulare dairymen show a slight slump from those of last month. This month a total of $80,612 was paid out, or about $2,000 less than for October.

L. A. Walton, of Sutter county, recently shipped several head of Tamworths to the Monte Vista Ranch, near El Cajon, San Diego county.

According to the latest assessment, the Nevada Sheep Commission, Humboldt county, has 170,220 head, valued at $431,800.

A new dairy is to be started by H. D. Cole, of Berkeley, who has recently purchased 300 acres near Bangor, in Yuba county, and will start a herd of Ayrshires on the new place in the near future.

Kern county officers think that they have arrested the cattle thief who has operated in a big way among the cattle ranches of that district during the past year.

A report from Livermore states that the lambing season has started in the Vasco district and that by January 5 it will be started on the Corral Hollow ranches. Sheepmen in that district declare that the feed is better than it has been since 1909.

A dairyman and a restaurant man were fined recently at Merced for selling unsanitary and diluted milk. The charges were made by State Dairy Inspector C. A. Starkweather.

The State Dairy Bureau last week swore out warrants for the arrest of three San Francisco butter dealers who are charged with short-weighting consumers.

The cattle market at the Portland Union Stockyards last week suffered a severe slump on account of the heavy shipments during the big Stock Show week. Declines were experienced of 25c for top quality and more for inferior stuff from last quotations. Hogs also dropped off 10c, extreme tops for choice at $1.85, with heavy stock 10 to 15c lower. Sheep house business held up well; prices for lambs, $6.25; prime wethers, $5; and ewes around $4.

Some 60 head of horses have been shipped into Butte county recently from the mountain districts adjacent to the Western Pacific company's lines.

The new firm of Hayes & Devaney, cattle dealers, of Livermore, has purchased a trainload of Arizona cattle which it will place on the range in either the West Train district or the San Joaquin City country.

A report from Yuba county states that an epidemic of hog cholera has broken out in that district and that several farmers have suffered severe losses.

The prices of dairy cattle received at an auction sale in Merced last week shows that the demand is all that could be hoped for, as prices went from $100 to $137 per head.

The Moulton Irrigated Land Co. shipped last week 21 cars of cattle from its place near Colusa to the San Joaquin valley.

IMPORTANT TO FLOCK OWNERS

To the Editor: The sixth annual meeting of the California Sheep and Woolgrowers' Association will be held at the Palace hotel, San Francisco, at 10 a.m. on Friday, January 9, 1914. Some of the important questions for discussion are:

"Free meat and its effect on prices of home production."

"Would stockyards in or near San Francisco be of benefit to our live stock market?"

"How can we raise a better percentage of lambs?"

"When mutton or lamb is the most healthful and most nutritious meat food, why is there a difference of two or three cents per pound between mutton and beef? Also lamb and veal? And how can this difference be overcome?" This subject will be treated in a paper by Dr. S. W. McClure, Secretary of the National Woolgrowers' Association. This is the most important question before us today.

D. O. Lively, director in charge of the live stock show in 1915, will tell about plans for the 1915 exposition.

John H. Hatton, Assistant District Forester, will address us on the subject of "Emergency grazing permits of the past season and their relation to national forests." Those securing these permits last season should make special effort to attend this meeting.

The report of our delegate to the National Woolgrowers' Association in Cheyenne last January will assist us in keeping in touch with the affairs of our national organization.

All sheepmen are invited to attend, as we believe the meeting will aid the industry in many ways.

FRED A. ELLENWOOD, Secretary.

DAIRY CATTLE.

REG. HOLSTEINS—We offer choice grandsons of King Segis, also grandsons of the world's record cow, Creamelle Vale; blood that increases the value of your herd. Write or call and see our herd. F. & H. Stenzel, San Lorenzo, Cal.

RANCHOS DOS RIOS, breeders of registered Jersey cattle. Oldest and largest herd in California; established 1868. A few young bulls from best cows in herd ready for delivery. Address R. E. Watson, R. No. 2, Modesto, Cal.

WANTED—Sixteen head grade Holsteins. Must be A No. 1. Test for butter-fat and weight of milk required. H. I. & A. F. Bobb, Fallon, Marion County, Cal.

GRADE SHORT-HORN DAIRY COWS FOR SALE, also a few registered Holstein bull calves. Apply A. Balfour, 350 California St., San Francisco.

CALVES RAISED WITHOUT MILK—Cost less than half as much as the milk-raised calves. Write for free book to COULSON CO., Petaluma.

FRANK MECHAM, Petaluma, California—Breeder Red Polled cattle, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

CHOICE REGISTERED JERSEYS—5 fresh young cows, 2 heifers. Bull, grandson of famous Golden Lad. F. E. Thayer, Live Oak.

REG. GUERNSEY CATTLE and Hampshire hogs, young stock for sale. Bella Vista Stock Farm, First Nat'l. Bank Bldg., Berkeley.

FOR SALE—35 head of registered and grade Jersey dairy cattle. Inquire of H. V. Traynham, College City, Cal.

N. H. LOCKE CO., Lockeford, Cal.—Choice young Jersey bulls and bull calves from prize winners and producers.

J. W. BENOIT, R. 2, Modesto, Cal.—Breeder of Holstein-Friesian cattle; correspondence solicited.

WILLOWWOOD JERSEY FARM—Registered Jerseys. C. M. McFarland, Route 2, Tulare, Cal.

REGISTERED SHORT-HORN CATTLE AND BERKSHIRE HOGS. H. L. Murphy, Perkins, Cal.

SUNNYSIDE HERD—Registered Holstein cattle. R. F. Guerin, R. 3, Box 58, Visalia, Cal.

REGISTERED JERSEY CATTLE—Young stock for sale. W. J. Hackett, Breeder, Ceres, Cal.

REG. GUERNSEY BULLS for sale. Grapewild Farm, Mayhews, Sacramento county, Cal.

JOHN LYNCH, breeder of Registered Short-horns, milk strain, Petaluma, Cal.

REGISTERED JERSEY BULLS for sale. D. F. Conant, R. 5, Box 64, Modesto, Cal.

K. W. ABBOTT offers six registered Holstein heifers for sale. Milpitas, Cal.

J. S. GIBSON CO., Williams, Cal.—Reg. Holstein bulls for sale.

BEEF CATTLE.

BLACK POLLED ANGUS, ten yearling bulls, entitled to registration. I have nothing but thoroughbred stock. C. S. Whitcomb, Exeter, Cal.

SIMON-NEWMAN CO., Breeders of Registered Herefords. R. M. Dunlap, Manager, Newman, Cal.

T. B. GIBSON, Woodland, Cal.—Registered Short-horns and Poland-Chinas.

HEREFORDS—Fairfax Perfection heads herd. J. P. Cudahy, Belton, Mo.

HEREFORDS—Gay Lad 6th heads herd. O. Harris & Sons, Harris, Mo.

HORSES AND MULES.

PURE-BRED REGISTERED PERCHERONS AND BELGIANS. A few choice young stallions from three to five years old, also two and three years old fillies for sale. Los Altos Stock Farm, Los Altos, Cal.

FOR SALE OR TRADE—Registered Missouri jack, 5 years, 15.3 hands, sound, big and heavy boned; good colts to show. Want work stock, horses or mules. Address, Linden Stock Farm, Linden, Cal.

FOR SALE—Bay Percheron stud colt, coming 2-year-old out of 2000-lb. horse and 1800-lb. mare; weighs 1600. Price low. Address Box 1819, Pacific Rural Press.

PUREBRED MAMMOTH JACKS—Prices reasonable; terms liberal. If desired will take as payment get of jacks at weaning. J. E. Dickinson, Fresno.

BIG BONED BREEDING JACKS for sale. Jas. W. McCord, Hanford.

SWINE.

A WHOLE H-O-G OR NONE. FOR SALE—Two of the best splendidly built and marked young registered Poland-China boars; one 18 months old, the other 6 months. If you are interested and want something good, write for particulars, photos and prices. Rough's Greenfields, W. H. Rough, Prop., Arlington, Riverside county, Cal.

REGISTERED DUROC JERSEYS—No better anywhere. Boars, sows and young stock for sale. Immediate delivery. Jno. P. Daggs, Modesto, Cal.

BERKSHIRES—Utility and Choice Registered Pedigreed Stock. Correspondence solicited. C. H. Thompson, Novato, Cal.

DUROC JERSEY SWINE—Bred gilts, boars and young pigs. For particulars address Linquist Bros., Turlock, Cal.

REGISTERED POLAND-CHINA SWINE—Prize winners, finest stock in State. $30 up. M. Bassett, Hanford.

TAMWORTHS. The finest bacon hog. All ages for sale. Cottle & Hobson Co., Amsterdam, Cal.

POLAND-CHINAS; large type. The Browning Stock Farm. W. H. Browning, Woodland, Cal.

REGISTERED DUROC-JERSEY SWINE—Las Paderes Ranch, El Cajon, Cal. M. C. Allen, Mgr.

REG. BERKSHIRE SWINE, all ages, for sale. Grapewild Farm, Mayhews, Sacramento, Cal.

DUROCS from first prize winners State Fair $10.00 up. Ed E. Johnson, Turlock, Cal.

KNOB HILL STOCK FARM—Reg. Poland-China swine. A. M. Henry, Farmington.

CALIFORNIA NURSERY CO., Niles, Cal. Breeders of Thoroghbred Berkshires.

CHAS. GOODMAN, breeder of High-Class Berkshire Swine. Williams, Cal.

REGISTERED O. I. C. SWINE. C. B. Cunningham, Mills, Cal.

POLAND-CHINA HOGS—C. A. Stowe, Stockton, Cal.

SHEEP.

FRANK MECHAM, Petaluma, California—Breeder Shropshires, Rambouillets, American Merinos, both sexes. Take electric cars at Santa Rosa or Petaluma for Live Oak.

J. H. GLIDE, Dixon, Cal. Breeder of French Merinos and Shropshire sheep. Stock for sale at all times.

CHAS. KIMBLE, Breeder and Importer of Rambouillets. Hanford, Cal.

MISCELLANEOUS.

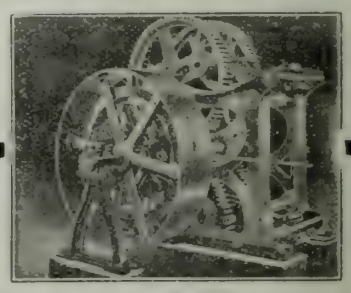
BRAE BOURNE RANCH—Berkshire hogs and Tri-color Collies. Young stock for sale. Mr. and Mrs. C. E. Rand, R. No. 3, Box 69, Santa Rosa, Cal.

AIREDALE TERRIERS, the farmer, stock raiser and hunters' friend. Puppies from $10 up. Dromore Kennels, Vallejo, Cal.

WAUKEEN STOCK FARM—Reg. Jersey cattle and Poland-China hogs. Chas. N. Odell, Modesto.

PAICINES RANCH CO.—Breeders of Registered Percherons and Short-horns. Paicines, Cal.

S. B. WRIGHT, Santa Rosa—Registered Berkshire hogs and Jersey cattle.



POMONA DEEP WELL PUMPS

We make a specialty of building pumps for raising water from deep wells for farm or irrigation purposes. We also make orchard valves, gates, etc.

Write for New Catalog No. 54 P.

POMONA Manufacturing Co. Pomona, Calif.

or Pease-Bundy-Taylor Co., Porterville, Cal., agents for San Joaquin Valley.

THE ALFALFA FINISHED STEER AND WHY.

(Continued From Page 601.)

dairy cow as a temporary relief from the cheap hay markets and are not men who will ever make any permanent business of dairying.

If it were necessary for these farmers to grow and finish the beef cow, thereby necessitating continual care the year through, it is doubtful whether any more favors would be shown the beef cow than the dairy animal, but in this respect the beef animal has advantages, as the alfalfa feed is most badly needed during the winter months by the range men, and in this way the farmer only has to care for the stock a compartively short time during the year after the rush of the hay season is over.

With beef finishing as with pork finishing, it has been found that alfalfa alone does not properly harden the meat so that before much can be hoped for from such a feed, some grain or other hardening food must be added to the ration.

Due to the small amount of experience along this line, just what will be most generally used for this purpose is not definitely known, but there are at least two things that may be profitably used, rolled barley, and corn ensilage.

Although very little has been done with silage as a finisher in California, it has been successfully used in the Middle Western States and is now being tried out in several places in this State, one company in the lower part of the San Joaquin valley having made plans for 40 concrete silos, a portion of which were built this year, and it is the aim to use them entirely for beef finishing in connection with alfalfa.

Regarding crushed barley as a part of the ration for feeding beef steers we have more definite information, as our largest cattle firm, Miller & Lux, have been using it very successfully on their alfalfa ranches for several years.

Being such a new idea to many, it may be questioned whether this is possible for anyone but such firms as the above, many supposing that the alfalfa ranches are run for the cattle regardless of the profit side, but such is not the case.

The way it works out with this company is not entirely from the gain in weight, but also in the extra price per pound that is received for the finished animal over the grass-fed stuff, and when the two gains are added together it brings the total gain up to more than enough to compensate for the feed at market prices.

As has been shown, those dairymen who have been compelled to sell their cows this year on account of the high hay prices, found that a poor cow has no business on high-priced hay, and the same thing will hold good with the range steers, for the gains that can be made from a scrub steer will never justify finishing him on good alfalfa hay.

In many ways the State of Nevada is far ahead of us in beef production, not so much on account of more favorable natural conditions, but because they have been compelled, through hard winters, to rely upon alfalfa at good average prices as a finishing feed, and in order to do that it has become necessary for them to raise a better grade of stock.

That this has been a benefit to them in many ways is generally known, but it is more forcibly demonstrated at the markets, for it is, after all, the butcher who decides the quality of the stock, and while on a recent trip through a large packing house in San Francisco it was explained that Nevada stock was preferable to all others for the reason that they are better bred and as a result finish up in much better shape when put onto the finishing feeds.

The chief reason that this condition has existed in Nevada before it did in California is because it became an absolute necessity for the alfalfa grower and the cattle grower to co-operate in order that they both might profitably continue in their respective lines.

It has taken some time for the same cause to assert itself here, for the economic reasons above given, but with prospects for cheap hay next season, which now promises to be a normal year for rainfall, and with a big shortage of dairy cattle, it is hard to see any reason why the entrance of the beef steer on the alfalfa ranch will not become of prime importance not only for the benefit of the beef man, but for the broadening of our alfalfa market. The only thing that is required for the accomplishment of the above conditions rests entirely with the alfalfa grower, for by stacking next year's hay and furnishing some other feed, either in the shape of silage or crushed barley, there does not appear to be any reason why we should not be able to handle next fall's crop of range steers profitably for both the hay grower and the range cattleman.

The HINMAN MILKING MACHINE took First Premium at the 1913 State Fair.

Manteca, Cal., July 20th, 1913.
Chas. F. Daniells & Son,
Modesto, Cal.
Dear Sirs:
I want to tell you of the great success I am having with the Hinman Milker. I had four machines installed a year ago and have been milking an average of forty-six cows and the work has been done by one man.
The milkers do not injure the cows in any way, the fact of the matter is they seem to like it, or at least they seem to be more contented when the machine is used.
I do not think any dairyman can afford to be without the Hinman Milkers.
Very truly yours,
E. POWERS.

C. F. DANIELLS & SON, Modesto, Cal.
California and Oregon Agents.

BREEDERS' SALES.

This column is open to purebred breeders of all classes of livestock and is run as often as we have a sufficient number to warrant the space. Those having made sales are requested to send us the name of the animal, registration number and name and address of purchaser. When such sales are reported we will gladly give them mention free of charge. The following sales have been reported since our last issue containing this column.

DUROC JERSEY SWINE.

John P. Daggs, Modesto, sold to Jesse Young, Modesto, 5 sows and 3 boars; to W. A. Schwab, Modesto, 7 sows and 1 boar; to H. W. Fairbanks, Berkeley, 6 sows and 1 boar; to D. W. Hobson, Sacramento, 6 sows; to H. W. Manning, Honolulu, 10 sows and 1 boar; to W. N. Birch, Manila, Philippine Islands, 4 sows; to J. W. Hottel, Modesto, 3 sows and 1 boar; to C. D. Hayworth, Modesto, I sow and 1 boar; to N. R. Shipman, Ceres, 1 boar; to J. L. Curtis, Turlock, 1 sow; to R. C. Lathrop, Volta, 1 sow and 1 boar; to H. S. White, Chino, 1 boar; to H. S. Van Vlear, Lodi, 3 sows; to Mrs. May Bouville, Clay, 1 sow; to Jesse Chambers, Kings City, 1 boar; to W. G. Keng, Modesto, 1 sow; to Geo. Cressey, Modesto, 1 sow; to Robert Murdock, San Francisco, 16 sows; to W. J. Jones, Oakdale, 1 boar; to John Kincaid, Bakersfield, 1 boar; to W. L. Henshaw, Willets, 3 boars; to Marden Mansen, Belota, 1 boar; to L. W. Adams, Modesto, 3 sows and 1 boar; to A. S. Johnson Land Company, Yerington, Nevada, 13 sows and 4 boars.

BERKSHIRES.

R. Merrill and Son, Morgan Hill, sold to M. W. Barngrover, Taylorville, 1 boar and 1 sow; to Bowie Bros., Morgan Hill, 1 boar, 4 sows and 9 pigs.

Brae Bourne Ranch, Santa Rosa, sold to M. S. Wilson, La Honda, 4 bred sows; to R. Rahm Arbuckle, 4 bred sows; to Irmagarde Richards, Montara, 1 Collie pup.

Clausen and Peterson, Blacks, sold to W. W. Powers, College City, 3 gilts sired by Third Masterpiece; 1 boar sired by Silver Tips Duke; to Yolo Orchard Co., Yolo, 1 boar sired by Silver Tips Duke.

HOLSTEIN CATLTE.

R. F. Guerin, Visalia, sold to L. B. King, Visalia, Black Beauty of Sunnyside; to F. G. Clark, Tulare, bull Trobador of Sunnyside; to Mrs. E. J. Howell, Visalia, bull Lion Dredmond Hengerveld; to E. E. Ames, Tulare, bull Blithdale Hengeveld; to T. G. Yerby Hanford, bull Playful Rondo of Sunnyside.

Teacher of Hygiene—Why must we always be careful to keep our homes clean and neat?

Little Girl—Because company may walk in at any minute.—Judge.

Buy An Ideal Green Feed Silo Now.

Now is the best time to erect a silo for the following reasons:

1st. You have more spare time now than in the spring.

2nd. You will be prepared to save your first cutting of alfalfa, which makes A-1 ensilage, but is almost worthless for hay on account of weeds, etc., and at the same time it is hard to cure for hay.

3rd. By saving the first cutting of alfalfa or any other crop that you can produce, you are insured against burnt-out pastures, also the high prices of mill feed.

4th. We will sell you an Ideal Green Feed Silo, if ordered now, on special terms that will almost make your silo pay for itself.

DON'T WAIT. BUY NOW.

WRITE FOR SPECIAL SILO PROPOSITION.

DE LAVAL DAIRY SUPPLY CO.

101 Drumm St. SAN FRANCISCO
1016 Western Ave. SEATTLE

PACIFIC COAST AGENTS FOR JAMES BARN EQUIPMENT.

Belgian Stallions

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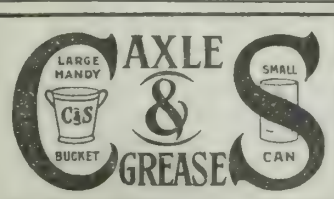

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The Calf Before and After Birth.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

All dairymen are as much interested in the rearing of good calves as they are in the care of the matured cows, as it depends a great deal upon the care of the calf both before and after it is born whether it develops into a good producer or not.

There always has been and perhaps always will be a great deal of difference of opinion as to whether the persistent milker should be dried up before she calves, some claiming that it is impossible to dry up many cows and others claiming that nature's way is to give the animal a rest for at least a short period before the calf is born.

That it is possible to dry up a persistent milker was seen on a dairy in Stanislaus county recently where Jerseys are kept. There are about 40 head on the place, none of which give less than 300 pounds of fat in a year, and some of them going as high as 600 pounds.

The drying up process is started about two months before the calving time by only milking every other milking at the start which is continued for perhaps the first week, after that time the cow is only milked every other day at one milking until in a short time the flow gradually lets up, when it is only necessary to strip and finally that is discontinued. It should be said, however, that from the first it is the plan to only milk out that amount which was in the udder at the start and not to draw upon the amount which the cow usually manufactures while being milked.

By giving her this rest it is claimed that a cow will produce more fat year in and out and will also drop a more vigorous calf than when she is milked right up to the calving period.

The calf pens on this place are also given careful consideration, as it is the aim to give every heifer a good start. Three separate pens are built for this purpose side by side with a gate connecting them. The first pen is for those under two weeks of age that are fed entirely on milk. The next lot is for those that are being taken off from the whole milk ration and transfered on to skim milk, some crushed barley and bran. The third lot is for those that have been taken entirely off from the milk and fed some grain and alfalfa hay.

By arranging in this way the older ones do not interfere in the feeding of the younger ones, which is oftentimes a great annoyance to the feeder.

A small shed has been built in each lot which affords ample protection from the rain and cold in winter and a small patch of eucalyptus trees in the back end of the lots furnishes plenty of shade during the hot summer months.

The motto of this man is to give more care to the calves and receive as a result better returns from such calves when they start milking.

RECORDS FOR CALIFORNIA HOLSTEINS.

A noticeable increase in the number of California Holstein cows having finished official records for the period between September 13 and October 22 is shown in the last report of Malcolm Gardner, superintendent of Advanced Registry. Among those given in the report are the following owned by A. W. Morris and Sons, Woodland: Riverside Seely Girl 99695, 411.4 pounds milk, 14.62 pounds fat; Inka Tritomia Alcarta 96197, milk 362.4 pounds, 13.741 pounds fat; Laura Netherland Gerben 2nd 120931, milk 495.7 pounds, 19.993 pounds fat; Susie De Kol Canary Mercedes Burke 129049, milk 369.3 pounds, 13.036 pounds of fat; Aggie Rosa Johanna De Kol 146445, milk 335.1 pounds, 11.761 pounds fat; Fancy Elmo Pondyke 141358, milk 307.5 pounds, 9.841 pounds fat.

R. F. Guerin, Visalia, owner: Tampa Maud Muller 115420, milk 413.1 pounds, 18.101 pounds fat; Iola Dawn Queen 115-419, milk 385.5 pounds, 15.541 pounds fat; Princess Fayette 3rd 115416, milk 433.3 pounds, 12.662 pounds fat; Precious Promise 128777, milk 457.7 pounds, 15.054 pounds fat; Calvia Wee Julip 128776, milk 439 pounds, 13.003 pounds fat; Nordica Queen 142239, milk 384. pounds, 15.254 pounds fat; Viola Virginia 203373, milk 253.9 pounds, 10.343 pounds fat; Button Hole Bess 2nd 158767, milk 245.2 pounds, 9.261 pounds fat; Lady Dorthy Hengerveld 173587, milk 300 pounds, 9.188 pounds fat.

K. W. Abbott, Milpitas, owner: Creamelle De Kol Spofford 146501, milk 355 pounds, 12.598 pounds fat; Linden De Kol 146503, milk 423.5 pounds, 14.932 pounds fat.

All of these were seven day records and many of them were cows that have been bred in California. It should also be said that many of them were young cows with their first calves, which accounts for the seemingly small production in some cases.

WHAT OFFICIAL RECORDS MEAN.

With so much talk of official testing and records many of our readers are doubtless a little in the dark as to what an official record implies.

The different breed associations have their own rules regulating the amount of fat a cow must produce, at different ages, in a given time.

In order to be admitted to the Holstein-Friesian registry a cow, calving on or before the day she is two years old, must make a record of not less than 7.2 pounds of butter fat in 7 consecutive days. For every day that she may exceed two years of age at date of calving the requirements for butter fat record shall be increased .00439 of a pound. This rate of increase holds until the animal is five years of age when she must produce not less than 12 pounds of butter fat in 7 consecutive days.

Those for the Jersey, Guernsey, and other breeds vary, as the case may be, but the main advantage gained by them is to be absolutely certain that the cow has given the stated amount, which greatly aids the selling of her calf, on the presumption that like begets like. This has now become so generally acknowledged that up-to-date dairymen will not purchase a purebred sire unless some official testing has been done on his ancestors. This condition is becoming more pronounced every year, in California and will be a great builder up of our dairy herds.

LIVESTOCK CHANGES AT STATE FAIR.

In a communication to this office, J. M. McCarthy, secretary of the State Agricultural Society, states: "As there was considerable conflict regarding base dates of dairy cattle at the last State Fair, the live stock committee of the Society has decided that in the future the base date for all dairy breeds at our State Fair will be August 1st. We believe this date will be fair to all, as this date is usually adopted in the East, and I notice is used at the International also. We trust that you may give this space in your valuable paper and that all breeders of dairy cattle may be benefited thereby."

The coming of thousands of Hollanders to California after the opening of the Panama Canal is prophesied by a Dutch capitalist now in the State.

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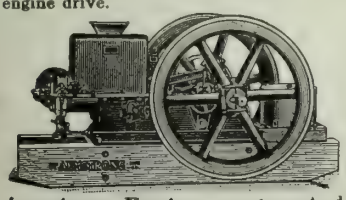

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Care of the Mare in Foal.

Good sound mares are as valuable to the farmer as any other kind of livestock that he can keep, for they not only do the farm work much more cheaply than unsound mares, but are also able to produce a much better foal.

Like all other kinds of farm animals a great deal depends upon the care that the dam receives while in foal, and to produce good strong healthy foals it is necessary for the owner to exercise a good deal of care in the manner that she is handled.

As the climatic conditions in New South Wales are very much the same as we have in California the following which is taken from the Agricultural Gazette as to the best method of handling the mare in foal, contains good advice for us:

As the period of gestation varies in individuals, and sometimes in the same mare in successive periods, no one can state with reasonable preciseness when foaling will take place.

The approximate period is usually stated at 11 months, or 330 days; but this is by no means constant, and it may be most safely stated that it will vary from 322 to 346 days. In extreme cases foaling has been delayed until 400 days have elapsed, and first pregnancies often last a year. Where parturition is delayed it is often accepted as an indication of a male foal.

A farmer who, in his anxiety to give intelligent care to the mare that he believes is in foal, wishes to register the earliest symptoms of pregnancy, should on the cessation of oestrum or heat, note any enlargement of the abdomen three or four months after, although this is not always noticeable, particularly with fillies. A slight falling beneath the loins and hollowness of the back may be present, or the udder may be observed to change in shape, becoming rounded, firm, and free from wrinkles, and the teats more prominent. These changes in the udder come and go during the period of gestation. A steady increase in weight daily after the fourth or fifth month is a sound indication, as well as the swollen and reddish state of the vaginal mucous membrane. After the seventh or eighth month the movements of the foal may be detected by the hand or fist being pressed firmly against the abdominal wall in front of the left stifle. An examination after the mare has had a drink, or during feeding, will find the foal moving in the womb.

Treatment during the period of gestation must be directed on common-sense lines. A draft mare may be given steady work up to within a few days of foaling—in fact, she is all the better for it—but a walking pace should not be exceeded, and any strain or strenuous effort should be avoided, especially as the period of foaling approaches. Shaft work is generally associated with the possibilities of accident or over-exertion, and should be discarded. If a mare is a noted sweater, then over-exertion should be avoided.

A liberal supply of sweet food of good quality is needed during the whole period of gestation, and should be steadily increased towards the end of the period, for the foal is daily increasing its demands for nourishment—a fact that has to be remembered when feeding. Furthermore, increasing activity is noted in the udder, where milk is being secreted for the foal, and a class of food likely to stimulate milk production is required at this stage, especially alfalfa.

The bowel discharges require to be watched, and constipation corrected by bran mashes and green food.

The main diet has to be arranged in order to meet the demands of mother and foal.

Good chaff and a little grain, and other foods rich in those elements which form flesh and bone, may be required to supplement grazing. Alfalfa is always a useful adjunct to any ration, not only because it affords protein for flesh formation, but also because it stimulates the flow of milk.

Towards the latter portion of the period of pregnancy the muscles of the hind quarters fall away from the buttock, and a shrinkage of the hind quarters and flanks becomes evident.

Care should be exercised to avoid any class of work entailing excessive fatigue or sudden movements, also jerky exertion.

It may safely be laid down as a rule to work draft mares to within a fortnight of their expected time of foaling.

In this country, where the climate is so propitious, and sunlight with its healthy influences so much in evidence, mares are allowed to foal in clean, well-grassed fields, in which are shelter, shade, and a good water supply. Precaution should be taken to see that the mare is not disturbed, and she is best alone, for the presence of other horses often creates undue apprehension.

The ordinary symptoms of approaching parturition are familiar to most breeders. The abdomen becomes more pendulous, the udder enlarged, the teats thickened and extended, and the muscles of the croup less prominent, while the lips of the vagina enlarge and appear slightly parted. Often there is a viscid discharge. The waxy substance found on the opening to each teat drops off about twenty-four hours before foaling, and milk may flow from each teat on the application of pressure. At times the teats do not fill until after foaling. Sometiems the wax on the teats is absent; and yet again in other cases the usual symptoms of milk formation in the udder are delayed until after foaling.

When the time approaches for foaling the mare becomes excited and uneasy. Lying down, elevating the tail, and straining, are all marked symptoms of pains. These become more frequent until the climax is reached.

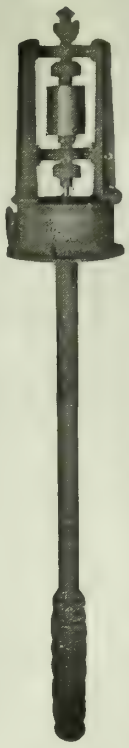
Natural parturition is rapidly and easily accomplished. A mare may be seen grazing comfortably, and on revisiting her half an hour later she may again be found complacently grazing, but this time with her foal at foot.

It is well to give the mare at least one bran mash daily for two or three days, the aim being to avoid giving her any class of dry food likely to cause constipation. The after-birth, which as a rule is naturally ejected in from three to eight hours after giving birth to the foal, should be buried or burnt.

PRICES OF CATTLE FEEDS.

To the Editor: I note in your quotations of foodstuff that you quote oilcake meal. You do not state whether it is linseed or cotton seed oilcake meal. I will thank you to advise me which of the two you mean by this quotation. While writing, may I enquire the cost of beet pulp in our State? I am making up a ration for feeding the cattle on my dairy farm in San Joaquin county and would be pleased to receive prompt reply.—M. D. V., Stockton.

[The quotation refers to linseed oil cake, as comparatively little cotton seed meal is used in this part of the country. We cannot give you definite prices on dried beet pulp, but you can get same by writing to Larrowe Milling Co., Los Angeles, who handled that sold in California. Believe that it will be something less than $25 per ton retail, over most of California, but have not price list nor more than a hazy recollection of what price is, so do not wish to be considered a guide in this case.—EDITOR.]



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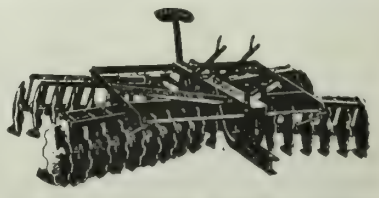

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PREPARING NEXT YEAR'S SILAGE GROUND.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

So much has been said of silos and silage in these columns during the past year that it may seem that anything further at this time is out of season, especially after all of the silos for this year have been built and filled, but silage is the same as all other farm crops, as soon as one crop is harvested plans must be made for the next one.

While it is true that a great many more silos have been built during the past year than ever before, it is also true that a great many delayed their operations until the season was too far along to realize the most from their land, as in many cases the silage crop was the only one harvested from the ground.

With only the one crop, the silo is now proving that it is entirely practical but it is still more profitable when a crop of hay is harvested before the corn is planted and it is for this reason that silo owners should be giving some thought to next season's operations, as it is about time to prepare the ground for the hay crop.

Along this line it might prove profitable to give the methods used by a silo owner near Ceres, Stanislaus county, who has owned a silo for over four years.

His ground is a sandy loam as is characteristic of that section and under canal irrigation. During the latter part of December or the first part of January the soil is plowed good and deep, harrowed and seeded to oats. Barley could be used and would in some ways be better, as it matures sooner than oat hay, but on this place it is thought that there is enough difference in the quality of the hay to warrant the extra time taken in growing the oats.

By planting at that time the owner is able to harvest his hay crop during the last of June or the first of July, the crop yielding from two to two and a half tons an acre which from the ten acres makes a sufficient amount to more than furnish the farm horses with feed for the entire year.

As soon as the hay crop has been harvested the ground is irrigated, plowed, harrowed, and planted to white dent corn which later yields an average of 10 tons of green ensilage to the acre.

The 25 tons of hay produced on the 10 acres may be said to be clear gain over the practice of the one crop plan that has been the result of the past year's hurried silo building.

At this time of the year the silage is being fed on the ranch, the ration used being 30 pounds a day, fed in troughs in the corral at noon.

AYRSHIRE BREEDERS' ASSOCIATION.

To the Editor: The thirty-ninth annual meeting of the Ayrshire Breeders' Association will be held in the parlor of the Manhattan Hotel, New York, on Thursday, January 8, 1914 at 2 o'clock p. m. to hear the President's address, report of Secretary and Treasurer, report of Auditor, report of Advanced Registry work, Election of Officers for the year ensuing, and to do any other business proper to come before this meeting.

The question of special premiums at the Panama Pacific Exposition for 1915 will be presented.

It is proposed to change Rule VI Advanced Registry, by inserting the words "but must begin the test within thirty days after freshening" immediately after "as soon after calving as practicable."

A request is made to submit to the Executive Committee for their approval and recommendation, that Article VII (b) be changed to read, "The fee for all males shall be two dollars when under two years of age, provided the sire and dam, or the dam and paternal grand dam have qualified for advanced registry, also that the get of this calf shall be allowed the right to be recorded at the reduced fee, when owned by members of the Association.

C. M. WINSLOW, Secty.

Brandon, Vermont.

Several Views of the Egg Question.

[Written for the PACIFIC RURAL PRESS by SUSAN SWAYSGOOD.]

The following letter written by one of our subscribers is something of a problem, but such questions ought to be worked out if possible, so we are going to try to answer this. The letter follows:

"Each season, as the price of eggs soars above 50 cents per dozen, the thought has persistently come to me that instead of selling eggs when they go below 15 cents per dozen and thereby becoming the main factor in the cold storage product, why not store them at the ranch by breaking them in bran and evaporating them, shells and all, or by some similar process, and feed them to the laying hen in the fall when prices are up. Of course some valuable properties would escape, in evaropation into the atmosphere, but no doubt the clover patch would return this deficiency. This is a material problem for ranchers to work out. It seems consistent, although a little radical and comes under the same lines as turning under a cover crop in order to obtain a better succeeding crop. If it works this idea might regulate the price of eggs at all seasons and do away with the most vicious middle men of modern times.—G. P. K.

Our friend's first mistake is in thinking that he has struck a "new idea," and that it is radical, whereas some crook exploits this thing every few years and ropes unsuspecting poultrymen in for a nice little nest egg. "Albumen" that is dried or evaporated eggs is a commercial product used by photographers, tanners and many other manufacturers. The eggs do not lose anything but water and any one can dry them by simply breaking them into plates, dishes or even wooden trays would do; no use of using bran, but as to whether it would pay to feed the dried eggs to hens is another question. About four years ago one of the before mentioned crooks was operating in Idaho, that is he was selling recipes to the ranchers to make hens lay. It happened that one of my daughters took the bait, but she could not buy Albumen anywhere. She sent to Spokane and the drug stores there did not have any in stock, so she sent $5 to me to get it for her in San Francisco. Not knowing what she needed the stuff for, I wrote down to the Owl drug store at once for prices. I just forget what I did pay but, anyway I sent the money and her address and told them to hurry the order off, which they did. Then I wrote and asked her what on earth she wanted of that stuff, and when her letter came I just sat down and laughed till I cried, because I had bit at the same bait myself once and I just knew that the girl's $5 was a total loss. But I kept still and waited for news of the big bank account she was getting out of her eggs. But not a word did she ever say and my curiosity was getting too strong to wait much longer, so I wrote and asked her "how her hens was doing since she had been feeding them eggs?"

She wrote back that "if ever that fellow put his face in those diggings again she would fill him full of powder and salt and furnish him with better employment than going around fooling people."

Now I do not want to be misunderstood on this question, I don't say that albumen has no value at all, because it has, it is classed in food analysis as protein.

WHAT PROTEIN IS.—"Protein is the general name given to all nutritive substances that contain nitrogen. These are "albuminoids,' such as the white of egg, a practically similar albumen in the blood; casein (the curd) of milk, myosin, the base of lean meat, and the gluten of grains. There are more but these are sufficient for our purpose, as you see, only the white of eggs are mentioned, because the yolk is made up of other foods also, such as fats, sulphur, iron and some others."

THE OFFICE OF PROTEIN.—"Protein necessarily enters into the formation of every bone, muscle, organ, tendon, tissue, hair and feathers of any animal or bird, and is essential to the repair and renewal of all these. Nothing can be made into protein, nor do the work of protein, unless it contains nitrogen."

From this we can judge the relative value of albumen on feeding eggs. The use of beef scrap, butcher's scraps or curd serves the same purpose and at a much lower price, because of the evaporation it takes a good many eggs to make any amount.

CANNING SURPLUS EGGS.—The Food Research Laboratory of the Bureau of Chemistry is conducting experiments in a number of egg breaking establishments in order to assist the manufacturers in canning perfect eggs for winter use. According to the specialists, there is no reason why eggs cannot be broken, canned and kept as an excellent food just the same as other products are canned and kept for use when the supply is low. As in all canning, however, the specialists have made clear that it is essential that nothing but perfect eggs be canned and that they be canned under such conditions of cleanliness and kept in such low temperatures that they have no chance to spoil.

Under the new system of canning, the eggs are canned in rooms and with utensils that rival in cleanliness the appointment of the hospital operating room. Everything is sterilized and those who actually break the eggs have to clean their hands as much as a surgeon does before operating. Each egg before being broken is candled and nothing but perfect eggs come into the breaking room. Each egg is broken separately into a cup. If, by any chance, the egg is other than first class, it is not dumped into the cup, but is removed from the breaking room and before the breaker can resume work, she must clean her hands and sterilize all the instruments she has used. The actual breaking is done with eggs at a low temperature and in a room where the air is cold enough to prevent any change in the egg. The cans of eggs are then sealed and frozen and kept frozen until they go to the baker or consumer.

MUCH BETTER AS HUMAN FOOD.—Now if the egg breaking and canning establishments will keep up to this clean method, eggs can be much more profitably used as human food than in feeding back to the hens. Even at ten cents a dozen they would bring more because of the water. Beef scraps at say three or three and a half cents a pound with all the water taken out would be far cheaper than eggs to feed the hens. In my opinion eggs should be made a staple commodity and have a regular price, or at least they should not fluctuate so that in winter nobody can get them but those who are fairly well off, and in summer people eat so many because they are cheap that they get surfeited of them. Give the poultryman thirty cents a dozen the year round and take care of the surplus in some such wholesome manner as the government is showing and the egg question will settle itself.

I have been writing for the poultry press the last ten years and advocating canning eggs and broilers many times over, but it has not seemed to do a bit of good. Petaluma has the finest place in the world for such institutions but nobody seems to have any faith in getting out of the ruts.

I have seen broilers such a drug on San

POULTRY.

SACRIFICE SALE—On account my immediate removal East will sell at very low prices my entire line of thoroughbred White Orpingtons, including my foundation stock and some grand young cockerels and pullets. Write at once for particulars, stating your wants. E. A. Jackson, Oroville, Cal.

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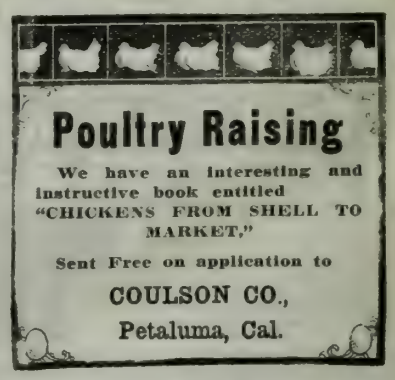

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Francisco market that you were lucky to get $1.50 a dozen for them and yet every fall thousands of work men and women, in orchard, hopfield, canneries and on dry grounds buy that poisoned chopped meat from Eastern packing houses. All my family, self included were nearly laid out for good from eating a lunch of sandwiches made from devilled ham. "Devilled," was the right name for that dope, the boy found me stretched out under a prune tree and it was so near being my finish that I will never forget it. Now then what is the matter with all these people who cannot stop to cook in the middle of the day during fruit season, eating good wholesome canned chicken? I say now as I have said before there is no enterprise among poultry men or they would pass the hat around and go to it and build a small packing house and cannery to take care of their surplus products. What is the good of howling about middlemen when we are all too indifferent or lazy to take the job out of their hands?

When my boys got into a racket and I did not know which was the actual aggressor I always took one in each hand and gently knocked their heads together, in that way I was sure to get the right one and it made them a little careful about getting in a mix-up next time. And sometimes I feel just that way with the poultry men; I would like to knock some sense into their heads for it don't appear as if I talk much into them. Well it will be Christmas before this gets to you, but when New Year comes let us all begin the New Year with a determination to get out of some of the ruts, that we have fallen into from habit and try new ways, try canning a few eggs ourselves next spring so as to have the fun of saying "we tried anyway." I know one woman who does can all her good fat broilers for family use when chickens are scarce. Why not try it? it will save cooking some hot day and be a real appetizing meal; then you will say "bless Mrs. Swaysgood."

SAN FRANCISCO TO HONOR THE HEN NEXT WEEK.

All along the line among the poultrymen of the North, the chief topic of interest is the coming show which is to be held at San Francisco, December 31 to January 4, and the promises of Secretary Ingram and the San Francisco Poultry, Pigeon and Pet Stock Association that they are to have the great central show seems very likely to be carried out.

Although this is San Francisco's first show, there have been 1400 entries made, including some of the finest birds in the State, and it is also announced that the entries of rabbits and pigeons will correspond very favorably with the balance of the show; in fact, it is expected that the showing of rabbits will excell that of any other show held this year.

Perhaps it should be said at this time that the beginning which the Association is now making should receive the support of everyone at all interested in better bred poultry, for it is only logical to assume that the metropolis of the State can better support the one big show of the season than any of the smaller sized cities.

The supply houses have shown their good will toward the show by almost exhausting the supply of floor space set aside for that purpose, and it appears ten days before the show that every available bit of floor space in the immense Dreamland Rink on Steiner street will be occupied when the show starts.

As there are many fanciers living in and about the city, it is thought that the attendance will surprise even the best wishers of the undertaking, and there will also doubtless be many holiday visitors from other parts of the State who will want to attend this starting of what is to be known as the great central show.

FANCIERS VS. UTILITY BREEDERS.

[Written for the PACIFIC RURAL PRESS.]

While talking with a prominent poultry breeder recently, the question arose as to why the average farmer who believed in better bred horses, cows, sheep or swine, does not attach more importance to the better bred fowl. His reply was that in his opinion the word "fancier" was one of the reasons, as it has caused the idea to become prevalent that the average man who keeps pure-bred birds for sale is only interested in breeding for the show and in doing so neglects the laying capacity. He further stated that in his opinion the word "breeder" should be used to designate one who breeds pure-bred fowls, the same as is used for stockmen.

No doubt his point was well taken, for it is true that most of us who only raise chickens as a side line think of the poultry fancier as one who raises fancy show birds regardless of their laying abilities and for that reason the good-looking rooster is selected from the mongrel flock either at home or from some neighbor, and the result is that the egg pail suffers when his offspring starts to lay.

How often one visits the ranch where the fruit trees have been carefully selected for their productiveness, the farm mares have been bred to the best of stallions, the dairy cows are headed by a pure-bred sire, and a registered boar is used on the brood sows. All of this trouble and expense is done with the sole aim of increasing the ultimate returns, and is conceded to be the best farm practices, yet if one goes into the poultry yard he very often finds that the worst kind of scrub hens are kept, and, what is still worse, that the rooster is of the same caliber.

True, the returns from the poultry yard are only a side issue, but if it has paid this man to build up the balance of his stock, would it not also pay him to buy a well bred male for his chicken yard?

In the opinion of the writer, it is not the extra cost of the pure-bred rooster or the setting of eggs which he might purchase with which to build up his flock that stands in his way, but rather a disregard of what he considers a very small part of his business, and a feeling that the breeder is, as before mentioned, a show man rather than a utility poultryman.

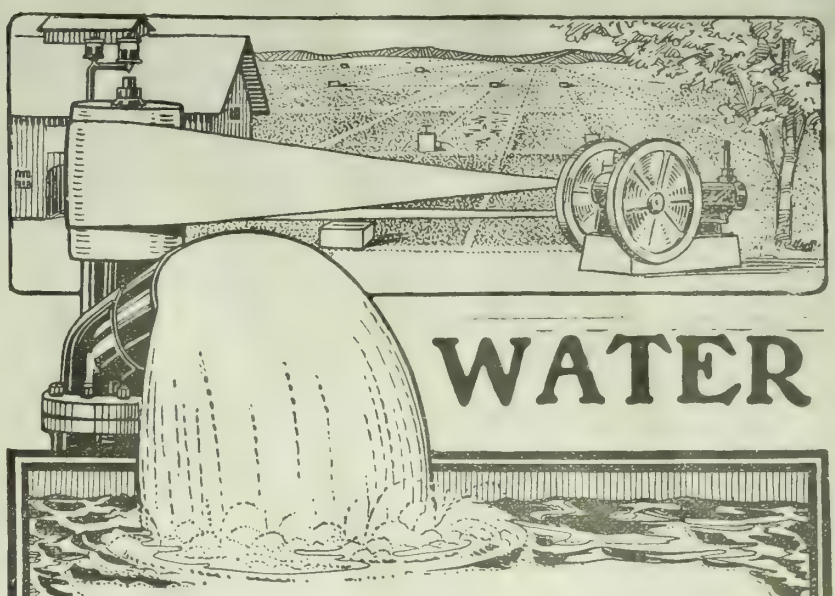
The past two years have been considered hard ones for the poultry raiser, the same as they have been for all other farmers who had to raise or buy feed, and while everyone is seeing the need of better bred live stock, on that account it would seem necessary to have better bred chickens also.

In this respect it is doubtful if there ever has been a better time to go in for better bred poultry than will be presented to the average farmer this year, for most of the flocks have been thinned down a great deal in numbers and a few well bred birds at this time would make the foundation for future years all that could be desired.

It is to be hoped that when purchasing the new stock the word "fancier" will not stand in the way of anyone patronizing the breeder who has stock that can be profitably used in breeding up, even if he does show at the poultry shows.

THOROUGHBRED POULTRY.

In this issue appears the announcement of the dispersal sale of the White Orpington chickens of E. A. Jackson of Oroville. Since entering the "game," Mr. Jackson has achieved considerable success as a poultry breeder, and his exhibits carried off the honors for that variety at the Oroville poultry show. He is shortly to leave California, and those interested in this popular breed of chickens will do well to get into communication with Mr. Jackson as early as possible if they want to secure some fine specimens at a bargain.



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OROVILLE, CAL.

The Home Circle.

New Plans for Home Water Supply.

[Written for the PACIFIC RURAL PRESS.]

There is not a single thing with the possible exception of the cook stove that is so essential for convenience and comfort in the farm home as the water supply of the house. Everything that can be done to make better living in the home and the work lighter, easier and better for the housekeeper should be done. Enough water at the right place and with sufficient force is a great thing, to say nothing about the help in case of fire.

There has been more improvement in methods of supplying and distributing water in the home in recent years than in the several decades since something like modern plumbing developed.

The essential thing is to have a good head so that when the tap is turned the water will come out in good quantity. This can be had either naturally or artificially. That is, the source of the water may be higher than the place supplied and no pumping will be required to lift the water before it can flow through the pipes. Or if the water is at the same level or lower than the house or yard, it will have to be lifted, either into a tank or directly through the pipes. The latter is a new development and has numerous advantages over the tank system.

In mountain districts of course, the matter is simplified, for usually the water can be taken from spring or stream into reservoir above buildings and flow naturally where desired. Mountain conditions also permit water to be kept in cooler anr purer conditions than out on the floor of a valley. Throughout most of California, however, especially in our valleys, water comes from wells and has to be lifted both to ground level and into house, barns or yard.

AIR PRESSURE OR TANKS.—The question right here is whether tanks are to be used or the new system of air pressure that sends the water through the pipes direct. Tanks are the old way, air pressure the new. The amount of power needed is practically the same whatever system is used, for if a certain push, so to speak, is given the water to take it up to the second story of the house, or to give it force enough to be used in fighting fire, it will cost just as much to give it that force one way as another, provided each method is used properly. Thus it does not matter especially as far as the power is concerned whether the water is lifted at once into a tank 70 feet high, or whether it is pumped into a tank at ground level with air that will force it 70 feet high whenever desired.

The principle that the air tank works upon is very interesting. It is most commonly illustrated in the bottles used for carbonated water, though there is some difference between the air tank and the bottle with carbonic acid gas. In the bottle, of course, a person presses the handle or lever on top and the gas in the bottle, part of which is dissolved in the water, forces the water out with a rush. Now when such a bottle is empty, that is, full of air, there is no force left to push outward. Leave that air in and also crowd in a lot of water and the air will push down to send all the water out again. The smaller the space the air is crowded into, the more pressure it will apply to the water. If the air is crowded down to half its natural space, it will force water up 30 feet or so. If it is crowded to a fourth of its natural space, it will send up the water four times as high, and so on. This is the principle that the new water systems work upon.

The operation of the system is as follows: The pipe from pump to tank is connected at the lowest point of the tank. The outlet pipe is either connected with this or comes from a similar opening at the other end of the tank. When the pump is put in motion and forces the water into the tank, the air in the tank is gradually compressed in the upper part and in turn exerts a pressure on the water as has been explained. However, to make the pressure better than it would be exactly as described the air in the tank is compressed a good deal at the start with an air pump, which gives a better pressure.

ADVANTAGES.—Such systems operated by air pressure have advantages that tanks cannot have. For one thing they are absolutely clean. To be any good at all they have to be air tight, and the water goes from gravel stratas in the ground to tank without exposure to contamination in any way and from thence through pipes to outlet.

The tanks are usually located at about ground level and under shelter. That means in hot summer days they are protected from the temperature and the water comes out nice and cool from the pipes. In winter, being in shelter the water does not freeze and break pipes, though this point is hardly as important in California as in the East, though important in some places.

Being in enclosed tanks, there is no opportunity for green growth or similar water vegetation to develop, nor do dust and dirt enter.

A very interesting point is that the air pressure itself is very cleansing. In the old-fashioned cistern this was a thing well understood and practiced. The water would get stagnant and smell badly, apparently be unfit to use. It would be "cleaned" simply by forcing air into the water near the bottom and allowing the water to absorb some of the air, becoming sweet and clean. The air simply burned up impurities.

The same thing is done in tanks where fishes are kept. In tanks operated by air pressure the principle is developed to an extreme limit, for there is a body of air above the water in the tank at all times, pressing down at the rate of many pounds to the square inch. Boiled water has almost no air in it and is flat and tasteless. Exposed to the air or poured backward and forward in the air it absorbs enough air to taste well again. Water in such tanks have far more than atmospheric pressure to make them absorb air.

Thus the pad of air in the tank will be gradually absorbed by the water and have to be added to. This is done by an air pump, operated when needed. Sometimes this will be once in two months or so, sometimes oftener. Rarely, however, does enough air become absorbed in the water to make it become milky when drawn from the tap, as occurs with some water systems. That does not hurt the water, but it frequently shows improper operation.

AN ILLUSTRATION.—There have been a great number of air pressure water systems installed in California the last two or three years and any could be used for illustration. That used to supply the home of P. J. S. Montgomery a short distance north of the town of Tulare is a Kewanee system, as are the others, and an outline of the method of operation will show how all are operated, in principle at least.

This is one of the finest country homes in California. The house is built on the lines of the old colonial mansions of the southern states and is surrounded by a large garden kept up to the highest standard. Several acres are in lawn alone, with the great valley oaks here and there over it, and there are besides numerous

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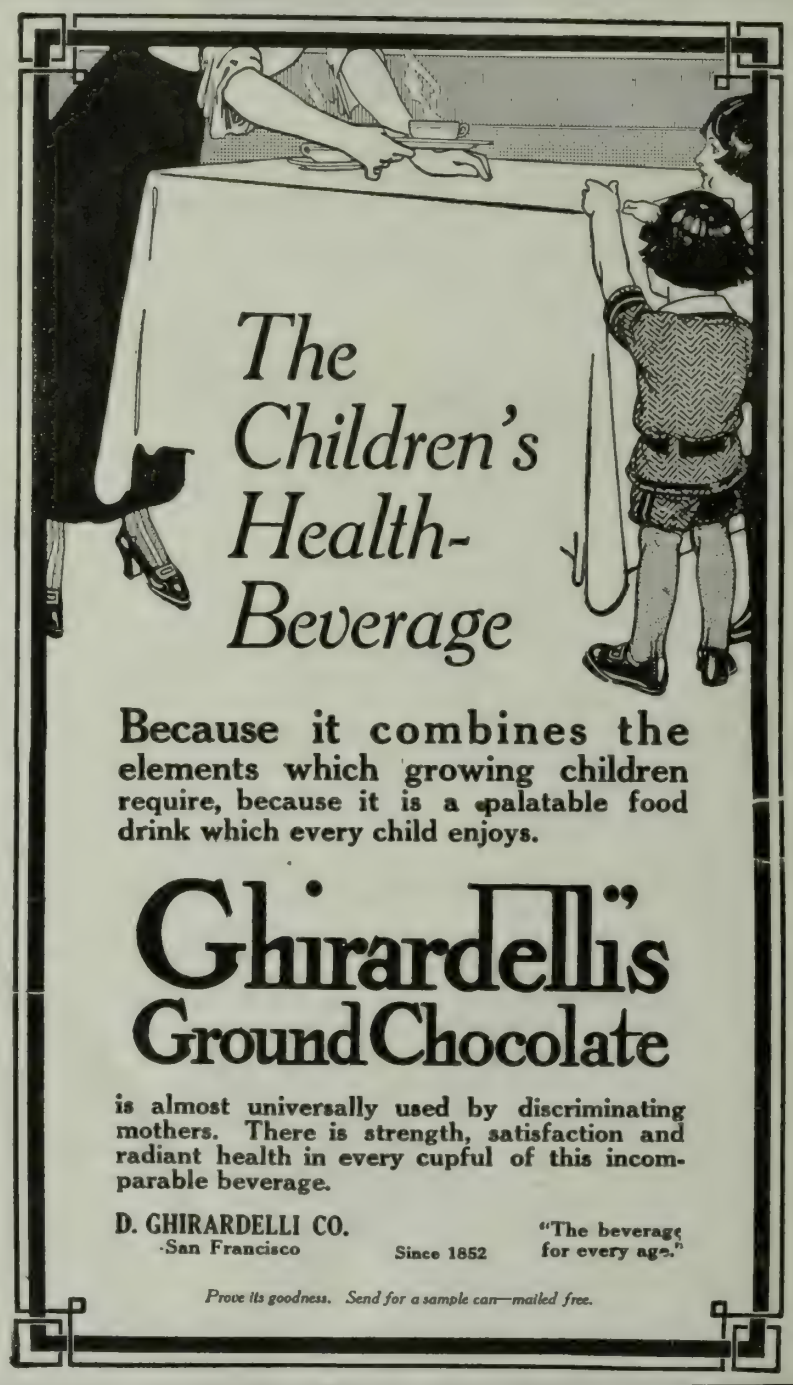

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imported trees of many varieties, flowers of many kinds, home garden and other cultivated land connected with the home activities. All this, as well as the house, is supplied with water with one of the Kewanee systems. Although a large amount of water is required and a large plant needed as a result, the propsition is just the same whatever amount of water is needed and when only a small house and garden is to be supplied a very small plant only is needed. For example here a 2500 gallon tank is used. The tanks are made as small as 140 gallons and up to 19,035 gallons, which latter can be used for town systems.

The water is secured from a bored well and is lifted by a centrifugal pump, purchased before it was decided to install this system. The later goes from the centrifugal pump into another pump which forces it into the tank. This is contrary to custom, for in the standard system the pumping is done directly from well to tank with a pump specially made by the Kewanee Water Supply Company.

The pumping is done with a five horse power electric motor, which works automatically, being governed by the pressure in the tank. Thus, when the tank is as full as the pump can work against the air pressure throws off the electric power and when enough water is removed to reduce the pressure to as low a point as the minimum is fixed for, the switch is thrown on again, there being a good supply of water at all times. The cost of pumping is naturally more than would be for ordinary irrigation, just as it would be more expensive to pump into a 70 foot tank than to an irrigation ditch direct, so the water is not used for ordinary irrigation, but only for house, barns, lawns, garden and other places where small amounts are needed at a time or good pressure required. The tank gives enough pressure to lift water about 70 feet.

When the water cushion in the tank is reduced through absorption of air by water in the tank a small air pump is started. This is run by a one-third horse power electric motor. It has to be operated usually only about once a month.

Electric power can be used with meter or flat rates. Only enough power for the motor is needed at a time and the method used here is to turn off the switch at the pump house in the evening, seeing that the tank is full, which gives enough water for all household purposes until morning, and the electric power is used for lights and other purposes in the meantime.

These systems can be operated, however, with any kind of power: electricity, gas, steam, or what not. There are even small plants that can be operated by wind power just in the same way. Take the ordinary windmill, connect it up and the deed is done.

These systems usually cost more than elevated tanks with equal capacity, though not much more and frequently cost less. They are much more sanitary, however, and give cleaner and more attractive water, are not subject to as many troubles as tanks, are durable and require almost no expense of upkeep or repairs, and are a great improvement in appearance over tanks. Running water in the house is a convenience and a necessity and air pressure or pneumatic water systems make one of the greatest steps in modern plumbing for the home, factory, or the country town that has developed for many decades.

Angry purchaser: "Didn't you tell me that you had got as many as twelve eggs in one day from those eight hens you sold me?"

Poultry raiser: "Yes, ma'am."

Angry Purchaser: Then why is it that I'm never able to get more than two eggs from them, and sometimes not so many, in one day?"

Poultry raiser: "I don't know ma'am, unless it's because you look for the eggs too often. Now, if you look for them only once a week I feel quite positive that you will get as many eggs as I did in one day."

An African Folklore Story.

With us the fox is credited with being the cunning animal; but in Africa the natives always think the little rabbit, besides being really wise, has this quality. As "Brer Rabbit" he has been immortalized.

I will give one of the many stories about him told among the Winamwanga, a Central African tribe.

A certain Master Bunny had been busy finding food for himself and his little family, moving about here and there the whole of one morning.

As the day wore on and the sun had risen high, it became too hot to be pleasant, especially as he was not able to change his beautiful fur coat for something lighter. Just at this juncture he spied a cave which looked both cool and inviting. He made for it and was soon inside enjoying the refreshing shade.

A lion chanced to pass that same way and, feeling the oppressive heat too much for him, walked into the very same cave as Master Bunny had done. The poor rabbit, stretched full length on the rock inside, saw him coming and, as can be imagined, nearly died of fright.

He thought to himself: "Oh, dear! oh, dear! I'm done for now, I've never been boxed so tightly before! I can lost nothing, but perhaps gain something by being polite to Mr. Lion. Anyway I'll pay my respects to him and gain a little more time to think."

So, jumping up, he bounded across to where the lion had settled, and, throwing himself backward flat on the ground in front of him, he clapped his forepaws together (the usual native way of greeting a chief) and said,—

"Good morning, Grandfather."

The lion was evidently pleased, and responded to his salutation graciously, bowing and clapping his paws together, at the same time saying, "Good morning, my child."

The rabbit was, meanwhile, thinking desperately what he could do to save his life. His usual ready resource was hard put to this time; but, quick as thought, what turned out to be a happy solution of his difficulty came to him. Running in desperate earnest to the low entrance of the cave, he stood on his back legs and, putting his front paws against the projecting rock, he called out excitedly: "Grandfather, Grandfather, the cave is tumbling down! Come quickly, and help me to hold it up!"

The lion, with a scared look, jumped up at once and was instantly by the rabbit's side, helping him with all his might to avert such a terrible disaster.

Master Bunny, so far successful, said, as soon as he was there, "Keep on holding, Grandfather, I'll run to fetch a prop; don't leave go, mind, till I come back, or you'll be killed for certain."

"All right," said Mr. Lion, "I'll hold on until you come." The kind and thoughtful rabbit bounded away, chucking to himself at the complete success of his clever ruse.

Poor Mr. Lion, tired and hungry, kept on for hours supporting the cave, as he imagined, wondering whether it was better to remain where he was or risk letting go and perhaps be crushed to death.

At last, feeling he could stand the strain no longer, cramped up as he was, and having decided that the rabbit was not coming, and saying to himself, "I can meet death but once anyhow," he let go, and rushed outside, fearing the worst.

To his surprise and chagrin, he found, on looking around, that the rock overhead had been quite firm and strong all the time. The "king of the forest" muttered to himself, "Ah! I ought to have known that rascally rabbit better: I deserve this for my sheer stupidity."—*Emmeline E. Deward, in the Southern Workman.*

Persons who wish to waterproof tarpaulins will find the following receipt of value. It is used by the government of New South Wales, on tarpaulins made from No. 5 canvas, 48 inches wide, and weighing 20 ounces to the square yard. They are dressed with two coats of the following mixture: boiled oil 60 percent, raw oil 31 per cent, fish oil 9 per cent.

Patience—So Jack kissed you?

Patrice—Why, certainly.

"And what did you say?"

"What would you say if Jack kissed you?"

"Nothing."

"Well, that's just what I said."

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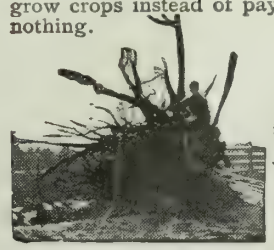

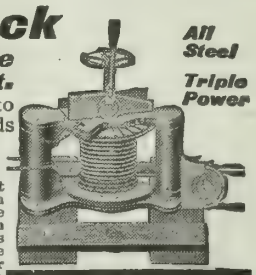

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PACIFIC PAINT & WALL PAPER CO.
2007 San Pablo Ave., Oakland, Cal.

THE MARKETS.

San Francisco, Dec. 23, 1913.

(Unless otherwise noted, quotations represent prices paid to the growers.)

Cereals.

WHEAT.

The grain market, as usual at this season, is very quiet, with only a limited quantity changing hands. Continued strength in the northern market, however, with rather light supplies on the spot, has kept prices firm here, and some lines show a further advance.

California Club, ctl	$1.52½@1.55
Forty-fold	1.55 @1.57½
Northern Club	1.52½@1.55
Northern Bluestem	1.70 @1.75
Northern Red	1.55 @1.70

BARLEY.

Business continues dull, but holders of spot barley are very firm in their views as to prices, and what few sales are made are at the former figures.

Brewing and Shipping	$1.37½@1.42½
Choice Feed, per ctl	1.27½@1.32½
Common Feed	1.25 @1.27½

OATS.

The demand has settled down somewhat of late, as there is little movement of seed grades at present, and feed requirements are limited. There is said to be considerable stock on hand, but so far prices have been maintained at the former level.

Red Feed	$1.65 @1.85
Seed	2.10 @2.30
Gray	Nominal
White	1.45 @1.50
Black Seed	2.50 @3.00

CORN.

There is little doing in this grain locally, as there is no very large demand, and spot offerings are limited. Supplies in Eastern markets are large, causing a feeling of weakness, but this has not yet affected local prices to any great extent.

California Yellow	Nominal
Eastern Yellow	$1.85 @1.90
Eastern White	Nominal
Egyptian	1.57½@1.62½
Kaffir	Nominal

RYE.

There is no demand worth mentioning here, but prices on all spot offerings are nominally held at about the range last quoted.

Rye, per ctl	$1.45 @1.50
Seed	1.65 @1.70

BEANS.

While business has settled down into a very quiet condition, as usual during the holiday season, the market continues very firm in practically all lines. The heavy fall movement has left rather light stocks of some varieties, and while no heavy demand is expected for some time to come, prices have made another advance. Bayos, blackeyes, and red kidneys have been marked up sharply, and large whites are a little higher.

(On wharf.)

Bayos, per ctl	$4.90 @5.00
Blackeyes	4.25 @4.35
Cranberry Beans	4.00 @4.25
Horse Beans	1.90 @2.15
Small Whites	4.75 @5.00
Large Whites	3.30 @3.40
Limas	5.00 @5.10
Pea	Nominal
Pink	3.00 @3.25
Red Kidneys	4.50 @5.00
Mexican Red	3.75 @4.00

SEEDS.

The demand is very light at the moment, values being nominally as last quoted.

Alfalfa	12½@15 c
Broomcorn seed, per ton	Nominal
Brown Mustard, per lb	3¾c
Canary	7 @ 7½c
Hemp	2½@ 3 c
Millet	2½@ 2¾c
Timothy	7½@ 8 c
Yellow Mustard	Nominal

FLOUR.

Prices have not been changed for some time, as the demand and supply are kept about even, though business is rather quiet at the moment.

Cal. Family Extras	$5.60 @6.00
Bakers' Extras	4.65 @5.20
Superfine	3.90 @4.10
Oregon and Washington	4.90

Hay and Feedstuffs.

HAY.

Arrivals again show a very slight increase for the week, but a considerable part of the offerings has been slow of sale and the market is in poor shape all round at the moment, the current demand being extremely light. There is accordingly a weak feeling as to prices, and in many cases concessions have been made to effect sales. Whether this condition will continue after the first of the year is hard to say, though there is no doubt that stocks in dealers' and consumers' hands are getting very low, and it will soon be necessary to buy for current needs. On the other hand, the continued rains have made holders in the country more willing to sell, and offerings from such quarters are becoming fairly large. As it is difficult to effect sales, there may be enough pressure on the market to force prices lower. Alfalfa is in good demand in the interior, but rather quiet here.

No. 1 Wheat, or Wheat and Oats	$15.00@16.00
do No. 2	13.00@14.00
Lower grades	12.00@@13.00
Tame Oats	12.50@16.00
Wild Oats	11.00@14.00
Alfalfa	10.00@14.00
Stock Hay	9.00@10.00
Straw, per bale	65@ 90c

FEEDSTUFFS.

Arrivals of bran are lighter than for some time past, and the price has accordingly been marked up a little. Shorts, however, are lower, and rolled oats also show a slight decline.

Alfalfa Meal, per ton	$18.00@19.00
Bran, per ton	24.00@25.00
Oilcake Meal	34.00@35.00
Cocoanut Cake or Meal	28.00@29.00
Cracked Corn	42.00@43.00
Middlings	33.00@34.00
Rolled Barley	28.00@29 00
Rolled Oats	32.00@33.00
Shorts	26.00@27.00

Garden Truck.

VEGETABLES.

The first lot of asparagus came in this week, and found ready sale at high prices. Several lines of southern garden truck show a wider range of prices, as desirable lots of beans and peas, summer squash, tomatoes, etc., are rather scarce and clean up readily, while the market is overloaded with poor stock for which there is little demand. On the whole, however, the tendency in these lines is upward. Green peppers and eggplant, howver, are lower. Mushrooms are plentiful and easy. Ordinary lettuce is lower, while the better offerings of rhubarb are held at an advance. Celery finds the usual heavy demands for the holidays, but is coming in freely, and prices remain at the former level.

Cabbage, per ctl	$ 1.25@ 1.50
Cauliflower, dozen	40@ 60c
Cucumbers, Southern, box	90c@ 1.25
Green Peppers, lb	2½@ 4c
Carrots, per sack	50@ 65c
Green Peas, Southern, lb	6@ 11c
String Beans, lb	6@ 12½
Summer Squash, lug box	1.25@ 1.75
Tomatoes, Southern, crate	35c@ 1.00
Eggplant, lb.	3@ 5c
Lima Beans, lb.	4@ 6c
Sprouts, lb.	4@ 5c
Celery, large, crate	1.50@ 2.00
Rhubarb, box	1.00@ 1.75
Lettuce, crate	75c@ 1.25
Mushrooms, lb.	5@ 10c
Asparagus, lb.	75c.

POTATOES, ONIONS, ETC.

Potatoes remain steady at the old figures, though it is feared that supplies may be curtailed by the eel worm trouble. The supply of local onions is gradually decreasing, causing higher prices for both local and Oregon stock. Sweet potatoes have declined a little from last week's figures.

Potatoes—	
New River Whites	75c@$1.15
Sweet Potatoes, per ctl	$ 1.25@ 1.40
Oregon Burbanks	85c@ 1.25
Onions: Yellow River, ctl	2.20@ 2.35
Oregon	2.50@ 2.60
Garlic, per lb	7@ 10c

Dairy Produce.

POULTRY.

Attention this week has been concentrated on the Christmas turkey trade, although the movement has opened rather slowly. Arrivals Monday amounted to 115 tons, including a lot of cold-storage stock from the East, and Tuesday's receipts were still larger. While the demand has picked up a little, prices are inclined to easiness, and there is very little stock that will bring the top figure, while a good deal of unattractive stock is offered at 18 to 22c. Arrivals of chickens have been light, and while the demand is not very strong, prices are still quite firm, with an advance in some lines.

Large Broilers	23 @24 c
Small Broilers, per lb	27@ 28 c
Fryers, per lb	20 @22 c
Hens, extra, per lb	18 @20 c
Hens, large, per lb	18 @20 c
Small Hens, per lb	16 @17 c
Old Roosters, per lb	14 @15 c
Young Roosters, per lb	18 @20 c
Squabs, per doz	$ 1.50@ 2.00
Geese, per pair	2.00@ 3.00
Ducks, doz.	4.50@ 8.00
Turkeys, live, per lb	17 @21 c
do dressed	23 @27 c

BUTTER.

Prices still show a downward tendency, with rather frequent arrivals of imported stock and liberal supplies from nearby points. There is a fairly good buying movement this week, however, causing a slight advance over Saturday's figure.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	30	29½	29	30	30	—
Firsts	28½	28½	28½	28½	29	—

EGGS.

Sharp fluctuations have taken place, with a rather high figure quoted at the close of last week, on a temporary shortage. The latest quotation, however, is rather low. There are some features, however, which would indicate a good outlook for prices, as the production is limited in most places, and local supplies of storage stock are getting well cleaned out.

	Thu.	Fri.	Sat.	Mon.	Tu.	Wed.
Extras	42½	46	51	47	43½	—
Selected Pullets	38	41	45½	43½	42½	—

CHEESE.

Offerings of California flats have been lighter, causing a 1c advance, while Y. A.'s are ½c lower.

Fancy California Flats, per lb	18½c
New Young Americas, fancy	17 c
Monterey or Jack Cheese	20@22 c

Deciduous Fruit.

Cranberries and apples are the leading features this week, both lines being in heavy demand for the holidays, but stocks so far have been sufficient for local needs, and no change worth mentioning has been made in either line. The red varieties of apples lead in demand, as usual at this season, and Oregon stock gets a large share of the business. Arrivals of strawberries are very light, and prices are higher, though the demand is limited. Grapes are unchanged as to price, but move slowly, most offerings being rather unattractive. Pears are higher.

Strawberries, chest	$ 9.00@10.00
Cranberries: Cape Cod, bbl	10.00@12.50
Apples: Baldwins	1.10@ 1.50
Spitzenbergs	1.10@ 1.60
Greenings	1.00@ 1.35
Bellefleur	1.25@ 1.75
Newtown Pippins	1.25@ 1.75
Pears: Winter Nelis	1.75@ 2.25
Grapes, crate	75c@ 1.25

Dried Fruits.

Nothing new has developed in the dried fruit situation of late, as buyers in the principal consuming markets are taking little interest, their requirements for the immediate future being fully provided for; while packers are practically out of the market for the holiday season. Price conditions are about as before, prunes being very firm, owing to the limited supply in the hands of either packers or growers. Most other lines are fairly steady in value, peaches showing less firmness than anything else. The New York Journal of Commerce says:

"There is little demand for forward shipments of California stock from the Coast, but the general feeling among shippers is firm, based on the statistical situation. Spot trade is light, being regulated by current necessities of consumption. In California prunes few orders are being placed at present by buyers at this end, but the offerings are light, as most of the packers are closely cleaned up. The market closed firm, with 6½c f.o.b. bulk basis apparently an inside quotation on 40s to 60s and a proportionately strong market on other sizes. On the spot here trade, while not active, is satisfactory, being helped in no small degree by the high price of fresh apples and the strong and relatively high market for the evaporated, which in times of plenty and low prices tell heavily on the consumption of prunes.

"In California raisins on the spot or for shipment from the Coast little business is reported at present, and the tone of the market is still irregular, prices depending upon seller. Imported raisins on the spot are meeting with a fair demand, but there is little interest shown in offerings from primary markets, where, according to cable advices, the feeling is firm owing to the cleaning up of holdings.

"Apricots and peaches, as usual at this time of the year, are getting little attention from the local trade, and prices are nominal."

Evap. Apples, 1913	6½@ 8 c
Apricots, 1913	10 @13 c
Figs, White	3 @ 4½c
Black	2½@ 3½c
Calimyrna	4½c
Prunes, 4-size basis	5 @ 6 c
Peaches	4 @ 4½c
Pears	6 @ 7 c
Raisins (in sweatbox):	
Loose Muscatels	4 c
Thompson Seedless	4½c
Seedless Sultanas	4¼c

Citrus Fruits

Shipments of oranges from California will be very light this and next week, but shortly after the new year the packing houses will be open for rush work. Prices have been lower than those reported last week, but as the quality of fruit is steadily growing better, it is hoped that good prices will be received after January 1st. At the auction held in Los Angeles last Friday, the prices ranged from $1.95 to $2.42½ per box, including freight. The next sale on this auction will be held on Monday, January 5th.

So far this season oranges from Butte county as well as those from south of the Tehachapi have been shipped out in less than half the usual quantity, while from Tulare county more than double the quantity were shipped over last season to the same date.

Lemons are lower in price, owing to heavy receipts of foreign stock.

The holiday season has brought out the usual large demand for oranges in the San Francisco market, and the better offerings are having a very good sale, although inferior fruit is somewhat lower. Fancy lemons are a little easier, and limes have dropped 50 cents.

Oranges (per box):	
New Navels	$ 1.25@ 2.50
Tangerines, crate	1.00@ 1.25
Mandarin	1.25@ 1.50
Grapefruit, seedless	3.00@ 4.00
Lemons	2.50@ 6.25
Limes	3.50@ 4.50

Nuts, Honey, Hops, Etc.

NUTS.

With holiday requirements well filled, a little easier market is reported in the East. Locally, however, values are pretty well maintained, and in view of the lack of offerings in the country, quotations to growers are entirely nominal.

Almonds, new crop:	
Nonpareils	19 c
I X L	18½c
Ne Plus Ultra	17½c
Drakes	15¾c
Languedoc	15¼c
Hardshells	7 c
Walnuts, new crop:	
No. 1 Softshell	16 c
No. 1 Hardshell	15½c
Budded	19 c
No. 2	11½c

HONEY.

Trading locally is quiet, with little demand at this season, but with practically nothing coming in, values are well maintained.

Comb, white	15 @16 c
Amber	11 @12 c
Dark	9 @10 c
Extracted: White	8 @ 9 c
Amber	6½@ 7 c
Off Grades	5 @ 6 c

BEESWAX.

Prices are firmly held at the old level, as there is nothing of any consequence offering in this market.

Light	30 @32 c
Dark	28 @30 c

HOPS.

Trading seems to be over for this year, though there are still a few scattered lots in the ocuntry which may be picked up later on. There is nothing new in prices as yet.

1913 crop	20@22c
1914 crop	15@17c

Live Stock.

There is little new to report in this market, all lines being quoted as before, with a rather firm feeling on most descriptions.

Steers: No. 1	7¼@ 7½c
No. 2	7 @ 7¼c

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Rate 3c. per word. No orders for less than 25c. per week. If you have anything to sell, or want anything, use these columns.

WANTED

RANCH MANAGER, graduated agronomist of German Agricultural University, with executive ability, wishes position on stock, grain or dairy ranch. Positive, practical and scientific experience in general farming, combined raising of dairy herds, beef stock, hogs and sheep, the planting of all crops, grain, alfalfa, corn, rice, sugar beets, ensilage, building of silos, crop rotation scientifically conducted; also in connection with the above branches of farming and stock raising, management of sugar beet and sugar cane, alcohol and starch factory's rice mills. Good references. Address MAX P. SCHOHR, Woodland, Cal.

WANTED—The best registered Jerseys. Will exchange the best rentable residence property located in Evansville, Indiana; value three and seven thousand dollars, pays regularly 6%. W. H. Rough, Arlington, Riverside county, Cal.

Practical Orchard man to take charge of orchard and vineyard. State age, experience, size of family, and salary heretofore commanded. Address Box 1918, Pacific Rural Press.

EXPERT Louisiana rice farmer desires work; manage any size proposition and make good. WM. SMITH, Route 3, Box 47, Fresno, Cal.

WANTED—25,000 Burbank cactus leaves in varieties, for spring delivery. P. O. Box 265, Santa Rosa, Cal.

WANTED—Dried fruits, nuts, honey, beeswax, beans, etc. J. E. Lawrence, 326 Clay St., San Francisco.

TREES AND NURSERY STOCK

CITRUS TREES—Washington Navels, ½ to ⅝ in., 70c; Washington Navels, ⅝ to 1¼ in., 80c; Valencias, ½ to ⅝ in., 75c; Valencias, ⅝ to 1¼ in., 85c; Eureka Lemons, ½ to ⅝ in., 75c; Eureka Lemons, ⅝ to 1¼ in., 85c; Grape Fruit, ½ to ⅝ in., 80c; Grape Fruit, ⅝ to 1¼ in., 90c. Above prices are for Balled Trees f.o.b. Glendora; 5c less packed in moss. Order any kind of tree you like and I will furnish same. Florida Sour and native sweet seed-bed stock. One-third cash must accompany all orders. W. O. West, Glendora, Cal.

WALNUT TREES WITH AN ANCESTRY—Placentia Perfection, Black Root. Sions taken from trees that have had the following requirements for the past four years. Heavy crop, smooth large nuts, rapid growth, symmetry and absolutely free from disease. Some 18 feet high. All this year's growth. Valencias, Navels, sour seed bed stock. Commercial species of Eucalypts in quantities. Cerro Villa Nursery at Villa Park. Address Hugh T. Thompson, Orange, Cal.

SPINELESS CACTUS—BURBANK'S improved varieties; forage and fruiting cactus. Orders now taken for Spring 1914 delivery. There is a limited supply of the improved varieties for sale. Send for catalogue and price list. Santa Rosa Spineless Cactus Farms, or Jesse I. Jewell, Santa Rosa, Sonoma Co., Cal.

Plant your orchard with dynamite system. We planted, in the spring of 1913, 28,000 trees with a loss of only 2%. Contracts taken for planting trees in any part of the State; 18 years practical experience. Write to ZUUR & CO., Santa Rosa, Cal.

WALNUT TREES.—Late blight resisting varieties grafted and budded on California black and hybrid roots—Eureka, Franquette, Mayette, Neff's Prolific, Concord and Placentia. Dr. W. W. Fitzgerald, Elks Bldg., Stockton, Cal.

ALFALFA SEED—New crop, homegrown, clean and first class in every respect. Prices reasonable. Sample on application; also am in the market for a good Holstein sire. A. F. SCHEIDECKER, Blacks, Yolo County, Cal.

CAL. BLACK WALNUTS for seed; true "Northern" type, which makes the best walnut stock known. Write for prices, stating quantity required. Santa Clara Valley Nurseries, Gilroy, Cal.

BERRY PLANTS AND RHUBARB—Everything in small fruits for garden and orchard. Send today for price list. LOUIS F. SCRIBNER, Pasadena, Cal., R. F. D.

Fruit Trees, Berries and Small Fruits; acreage planting a specialty. Roses Bulbs. Lists ready. H. A. HYDE, Watsonville Nurseryman.

FOR SALE—250 Franquette Walnut trees on Black Walnut root. Price $1.00 each. Address P.O. Box 21, Acampo, Cal.

Oregon Improved Strawberry Plants, excellent quality. $2 for 500, $3.50 per thousand. E. S. Comings, Graton, Cal.

50,000 apple trees on rented ground; must sell; order now at half price. Full Value Nursery, Petaluma, Cal.

Pear Trees For Sale. 2000 Bartletts, 4 to 6 feet, 10c each. N. M. Cunningham, Red Bluff, Cal.

LAND FOR SALE.

STOCK AND GRAIN RANCH—320 acres nearly level land, 20 acres alfalfa land, all fenced; house, barn, etc.; 75 head good stock cattle; good outside range. Price, $7,000 cash. Other ranches from $10 to $40 an acre. W. WALLACE BALDY, Mist, Madera County, Cal.

Cows and Heifers: No. 1....	6¼@ 6½c
No. 2	5¾@ 6 c
Bulls and Stags	2½@ 5 c
Calves: Light	7½@ 7¾c
Medium	7 @ 7½c
Heavy	5½@ 6½c
Hogs: Grain-fed, heavy.....	7¾@ 8 c
150 to 250 lbs.....	8¼@ 8½c
100 to 150 lbs.....	8 @ 8¼c
Prime Wethers	4¼@ 4½c
Ewes	3½@ 3¾c
Lambs: Suckling	5¾@ 6 c

DRESSED MEATS.

Steers	12 @12½c
Heifers	11 @11½c
Veal, large	11 @12 c
Small	13 @14 c
Mutton: Wethers	9 @10 c
Ewes	8½@ 9½c
Suckling Lambs	12½@13 c
Dressed Hogs	13½@14 c

WOOL.

Business is practically at a standstill in this market, as buyers are not inclined to do anything until after the holidays, and it is doubtful if there will be any movement worth mentioning until the spring clip is marketed. Prices are nominal at the former level.

Northern mountain	7 @ 9 c
Southern mountain	7 @ 8 c
Defective	4 @ 6 c
Lambs	7 @10 c

HORSES.

Buyers are not taking much interest just now, and while shipments to this market have been lighter than a few weeks ago, the majority of offerings move off slowly, and values are not very well maintained. First class heavy drafters, as usual, command good prices, but very few of them are coming in.

Heavy drafters, 1700 lbs. and over	$275@325
Light Drafters, 1500 to 1650....	225@250
Chunks, 1350 to 1500 lbs.....	150@200
Wagon Horses, 1250 to 1350....	100@150
Delivery Horses, 1050 to 1250...	100@125
Desirable Farm Mares.....	75@100

MULES.

1200 lbs.	$200@250
1100 lbs.	150@200
1000 lbs.	125@175
900 lbs.	75@125

BENEFITS FROM CHOPPED ALFALFA.

(Continued From Page 611.)

credit, it should also be mentioned that where the hay is stored, in buildings as it is on most places, there is a big saving in the cost of barn room, as a great deal more chopped hay can be stored in a space than is possible with whole hay.

One thing that should be given attention in storing the chopped hay is not to crowd it in around the sides of the barn as the increased pressure usually does considerable damage to the sides of the building. This can be overcome by stacking so that there is a small space left between the hay and the sides of the building.

While chopped hay is a saving in cow feeding, it is also often used in fattening beef steers in connection with rolled barley, and some claim that they have used it profitably for hog feed when soaked with some grain and skim milk. One man states that he finds it exceptionally good during the winter months for hogs, as he is able to feed more alfalfa in that way than he can in any other.

MISCELLANEOUS

REBUILT GAS ENGINES sold for 50% of their new value; cylinders re-bored new pistons, and thoroughly overhauled We furnish you a rigid guarantee. Send for our Bulletin, it will interest you. All sizes and makes of engines. MECHANICAL INSTALLATION CO., 181-189 Second St., San Francisco

WILL EXCHANGE almost new Peerless touring car, cost new $4500; for either beef cattle (calves or steers), or will give same to party to dig me deep wells. H. L., 24 Montgomery St., San Francisco, Cal.

The Patentome is free. An education in obtaining patents. Established 1865. Anderson & Son, Attorneys, 707 7th St., Washington, D. C.

HAY FOR SALE—Choice alfalfa hay, first, second, third and fourth crops, for sale. Write for prices. REYNOLDS & SMITH, Delevan, Colusa County, Cal.

Send for illustrated circular of best, most artistic orchard home in Santa Clara Valley; 20 acres. JOHN F. BYXBEE., Palo Alto, Cal.

PROFITABLE DETAILS ON THE DAIRY.

[Written for the PACIFIC RURAL PRESS by J. C. LOOMIS.]

The small wastes are what every farmer finds needing the most attention, for while the larger ones are conspicuous enough to be easily seen, the smaller ones require more study to successfully combat.

Nowhere does this hold true more than on the dairy and especially around the separator house where the speed of the separator, care of cream and various other duties require constant care.

The natural reason for this extra care is to get the greatest efficiency from the plant and in this respect the practice of a dairyman near Denair, Stanislaus county, shows what disregarded things sometimes mean from the financial side.

As is the practice of all dairymen, the cows are stripped immediately after milking until the whole string has been milked and stripped, but unlike the old practice of then turning the cows into the corral, he starts at the head of the string and again strips the entire string again. Although the amount of milk obtained in this way is very small, the quality is far above that of the regular flow as is determined by the scales and the Babcock tester.

Another saving which is made is at the separator and one that very few dairymen seem to know of. This is done by regulating the inflow of the milk from the supply tank. Instead of opening the valve wide as is customary after the separator is running at the desired speed, it is only partially opened, the valve lacking about an inch of being turned on to full capacity. This distance has been arrived at as satisfactory after experimenting and a notch was filed at that place so that the distance would be the same all of the time.

Through this comparatively simple thing, the test of the cream has been increased from around 35 to from 40 to 42 points and the saving by this and by the extra stripping makes several dollars gain a month, on the 16 head of cows being milked.

The idea of the regulating of the milk flow at the separator was taken from Bulletin No. 53 of the State Agricultural Experiment Station at Pullman, Washington, which also contains many other valuable suggestions regarding the handling of cream which should be of value to every dairyman, as it has been to the one before mentioned.

As the owner remarked, the money saved in this way on a large dairy would help a long ways toward the wages of a hired man to do some of the work that the owners are now having to do themselves in order to make their dairies pay.

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